CHAPTER 4: POPULATION

IF YOU LEARN ONLY SIX THINGS IN THIS CHAPTER . . .

1. The Demographic Transition Model is a tool demographers use to categorize countries' population growth rates and economic structures. The model analyzes crude birth rates, crude death rates, and total population trends in a society at a given point of time. Once a country moves into the next stage of the model, it cannot go back to previous stages, unless afflicted by nuclear war or another horrific calamity.
2. British economist Thomas Malthus coined the term *overpopulation* in the late 1700s. Malthus suggested that the world's population was growing faster than the rate of food production, and as a result, mass starvation would occur. Malthus was correct in his assumption about world population increase but was incorrect in his assessment of agriculture's inability to produce sufficient food.
3. The world's population is growing exponentially. Most of the growth is occurring in less developed countries. More developed countries are either at or near zero population growth. Some Eastern European countries are actually losing some of their population.
4. Population pyramids show the age and sex demographics of a particular country, city, or neighborhood. Inverted pyramids indicate a large percentage of elderly persons in the community. A large base indicates a lot of children in the society and could indicate a less developed country.
5. There are three primary push and pull factors: economic, political, and environmental. Each of these reasons has caused millions of people to move.
6. Refugees voluntarily leave an area for fear of death or persecution. Forced migrants are forced by the government to move. Forced migrants can suffer the same fate as refugees if they do not obey the government mandate for them to relocate.

When most people think of human geography, they usually think about population. With a world population of over 6.9 billion people and rising, population and the burden of overpopulation are certainly issues that many areas will be forced to deal with.

Population has been increasing for as long as humans have been on this planet. For the majority of this time, population increase has been slow, but during the past 200 years, population has exploded. Most population growth is taking place in areas, particularly in less developed countries, that are ill-prepared to handle growing numbers of people, leading to a population crisis for the world. This crisis is sometimes called a **population explosion**.

When looking at population, it is important to note that not all areas of the world are overpopulated. Some areas are actually underpopulated due to climatic conditions or other factors.

The study of population characteristics is called **demography**. Demography is the scientific analysis of population trends and it predicts future occurrences based on present statistics. A country's population growth and demographics are important in setting political policy and allocating scarce resources. Two major factors in demographics are the crude birth rate and the crude death rate. **Crude birth rate** refers to the number of births per 1,000 people in the population. The **crude death rate** is the number of deaths per 1,000 people.

Overpopulation is defined as the lack of necessary resources to meet the needs of the population of a defined area. These resources include food, water, and shelter. In a desert, the carrying capacity of the environment is far less than that of an agriculturally productive area.

Carrying capacity is the ability of the land to sustain a certain number of people. The more people inhabit an area, the more likely they will reach the carrying capacity of the environment. Once the carrying capacity is reached, the problems of overpopulation become apparent. People begin to starve, and many deaths occur owing to a lack of resources. Certain factors can alter an environment's carrying capacity, such as technological innovations that can increase food productivity (e.g., the Green Revolution).

It is important to note that people cannot live in large populations in five distinct areas: where it is *too hot*, *too cold*, *too hilly*, *too wet*, and *too dry*. Thus, humans are able to thrive on just a small percentage of the planet.

Japan is a good example of a country living on a small percentage of its land. The country of Japan has approximately 127.5 million people in a land about the size of California. However, only 16 percent of the physical layout of Japan can support any population. The rest of the topography of Japan is too hilly. This terrain means that Japan is very densely populated.

The term for habitable land is **ecumene**. An ecumene is an area where humans can live. An ecumene includes land with adequate water sources, relatively flat terrain, and available human food sources.

The more than 6 billion people on Earth live on a planet where resources are depleting rapidly. A large majority of them live within 100 miles of an ocean. Most of the Earth is covered in water: the Pacific, Atlantic, Indian, and Arctic Oceans comprise approximately 70 percent of the surface of the Earth.

Other areas of the world are **underpopulated**. The Great Plains of the United States is a good example of an underpopulated region. Although the Great Plains have been called the breadbasket of the United States, this area is sparsely populated and dominated by agriculture. The food availability is good, and the water levels are somewhat sparse but acceptable, yet still very little population is located there.

POPULATION DISTRIBUTION AND DENSITY

Arithmetic density divides the entire population of a country by the total land area to come up with a population density for the country as a whole. Arithmetic density is important when looking at a country's population trends, but it doesn't tell the whole story. **Physiologic density**, on the other hand, is a more accurate way to measure a country's population density. Physiologic density only takes into account the land that is being used by humans, whether as pasture, as an urban center, or in some other way.

Depending on which source or textbook one uses, there are four or five main areas of population density (concentrations) in the world. The four most important areas are East Asia, South Asia, Southeast Asia, and Europe. Sometimes these areas are called population distributions, concentrations, or clusters of the world. The fifth area comprises the northeastern United States and southeastern Canada.

East Asia

The first major area of population density is East Asia. The East Asia region contains the countries of China, South and North Korea, and Japan. This region of the world possesses over 1.5 billion people. China alone has over 1.3 billion people, most of whom live within the eastern third of the country along the Pacific Ocean. This area has favorable climatic conditions for food growth and transportation routes. A high plateau region, known as the Tibetan plateau, dominates the western section of China. The other sections are mountainous, and even today, developing adequate transportation systems within these regions is difficult.

South Asia

The second major region of population is the South Asia region. In this region, which includes the countries of India, Pakistan, Sri Lanka, and Bangladesh, population growth is still outpacing policies to reduce growth. Within the next 50 years, India will surpass China as the world's most populated country. Pakistan and Bangladesh are also within the top ten countries in the world in terms of population.

Southeast Asia

The third major area of population density is located in Southeast Asia, which includes Vietnam, Phillipines, Malaysia, Indonesia, and Thailand. Vietnam is quickly becoming one of the fastest-growing countries in the world.

Western and Central Europe

The fourth major area of population density is located in Western and Central Europe and extends eastward into Ukraine. Large cities, such as London, Moscow, and Paris, dominate this section of the world. Europe is mostly urbanized, as opposed to the East Asia and South Asian regions, which are still dominated by subsistence agricultural and rural economies.

Northeastern United States and Canada

The fifth major area of population density is located in the northeastern section of the United States and southeastern Canada. In the megalopolis of the East Coast of the United States, the urban area extends all the way from Boston, Massachusetts, to Washington, D.C. This area along Interstate 95 still has a large proportion of the population of the United States, although outward migration in recent decades has diminished its population. The southeastern section of Canada, including the cities of Toronto, Ottawa, and Montreal, contains the majority of Canada's population. This area extends southwards into the United States megalopolis region.

Each of these five areas has a high population density that is conducive for economic growth, and climate and access to agriculture are the major factors. If adequate climate conditions no longer existed or food could not be produced fast enough to support the populations, they would eventually die out.

POPULATION AND GROWTH

In the late 1700s, a British economist by the name of **Thomas Malthus** concluded that the rate of population was growing at a faster rate than agriculture productivity. Malthus coined the term *overpopulation*. It's fitting that an economist coined the term, because economics deals with the scarcity of resources.

Malthus was concerned that the world population was growing at an exponential rate while agricultural productivity was growing only at a linear rate, and that this inequality would eventually lead to a starvation pandemic. Malthus's book, *On Population,* was published in Great Britain and garnered some attention, most of it negative. He predicted that by the

late 1800s, Great Britain would be facing a nightmare with a lack of food for its burgeoning population.

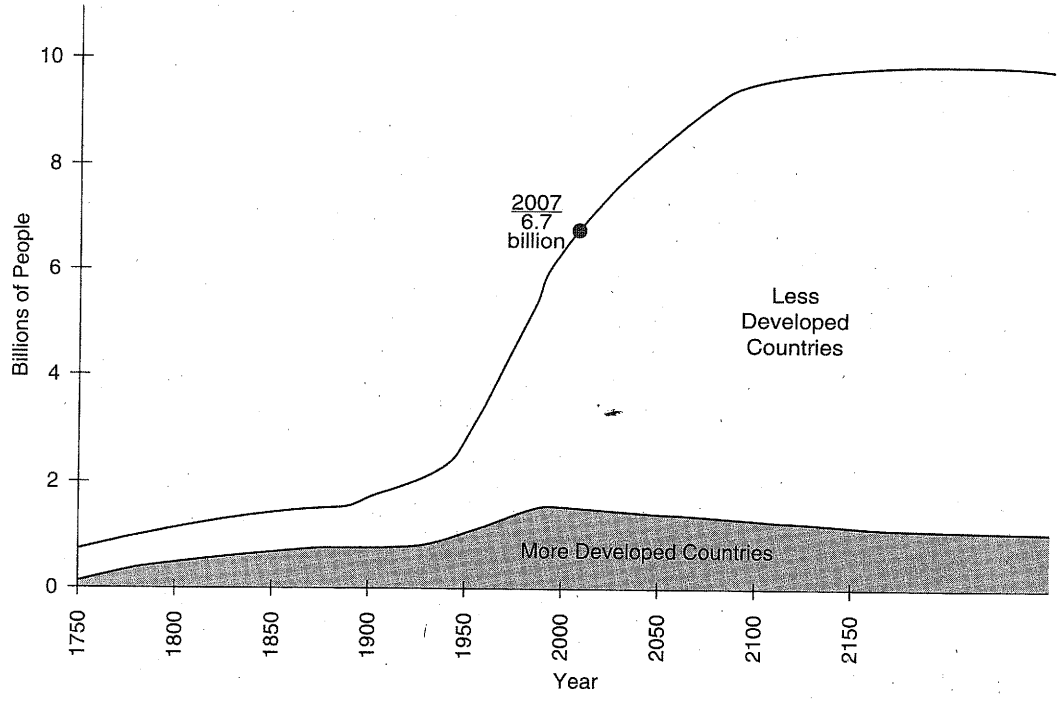

Figure 4.1: World Population Growth Chart.

Malthus is considered the first person to publicly foresee such a population crisis. He was correct in his assumptions that the world population would grow exponentially (see Figure 4.1), but his theory floundered on the agricultural side. Malthus never could have predicted the inventions that would mechanize farming and modify crops, which have greatly increased productivity.

Today, the world produces enough food to sustain itself, despite the fact that political regimes around the world have halted distribution to some people in need. See chapter 7, Agriculture and Rural Land Use, for information on productivity and profits across the globe.

Linear growth is simply growth that occurs evenly across each unit of time. For example, a village with 100 people and a linear growth rate of 10 people per year would see an increase of 10 people after the first year, to bring its population to 110. The second year, population would grow by 10 again, to 120, and so on. After ten years, the population of that village would be about 200 people.

Exponential growth looks at growth as a percentage of the total population. In the aforementioned village, a 10 percent exponential growth rate would mean that the next year there would be 110 people. But then the next year, population would grow by $110 \times 10\% = 11$ new people; the base population of 110 plus the 11 new people equals 121. After ten years, the population would be 234. The difference between the linear and exponential growth rates within a ten-year span in a village that starts with 100 people is 34. This is how the world's population growth has been expanding since the early 20th century.

As population continues to expand in the 21st century, we can predict which areas of the world will see the greatest growth.

The **neo-Malthusian** viewpoint is theoretical, not necessarily a demographic fact. According to neo-Malthusians, if there are multiple minority groups and no majority group within a population set, the growth rate will eventually resemble the rate of growth of the fastest-growing group within that set. This theory suggests that in a society tending toward the growth of the fastest-growing group, the crude birth rate and fertility rate will continue to inch upwards. Furthermore, the fastest-growing group will eventually become a majority of the population, its larger crude birth rate and fertility rate becoming those of the majority group. Eventually, the trend will continue regardless of the country's economic development. To the neo-Malthusians, the increased fertility and crude birth rates within immigrant communities will eventually cause an increased growth rate in more developed countries.

Going against the Demographic Transition Model, discussed in the next section, the neo-Malthusians believe that the United States is ripe for exponential population growth again because of its immigrant communities. Proponents of this philosophy point out the divide between the crude birth rate of 16 and the crude death rate of 9 in the United States, despite the fact that our economy is well developed in the tertiary (service-based) and quaternary (information-based) sectors.

DEMOGRAPHIC TRANSITION MODEL

The Demographic Transition Model, shown in Figure 4.2, is a good indicator of what will happen to a society or country's population. It is based on three primary factors: the birth rate, the death rate, and the total population. Furthermore, most Demographic Transition Models have four stages. Every society or country must go through these stages, and once a country moves from one stage to another, it does not go backward, unless it suffers a nuclear attack or a cataclysmic event on the landscape.

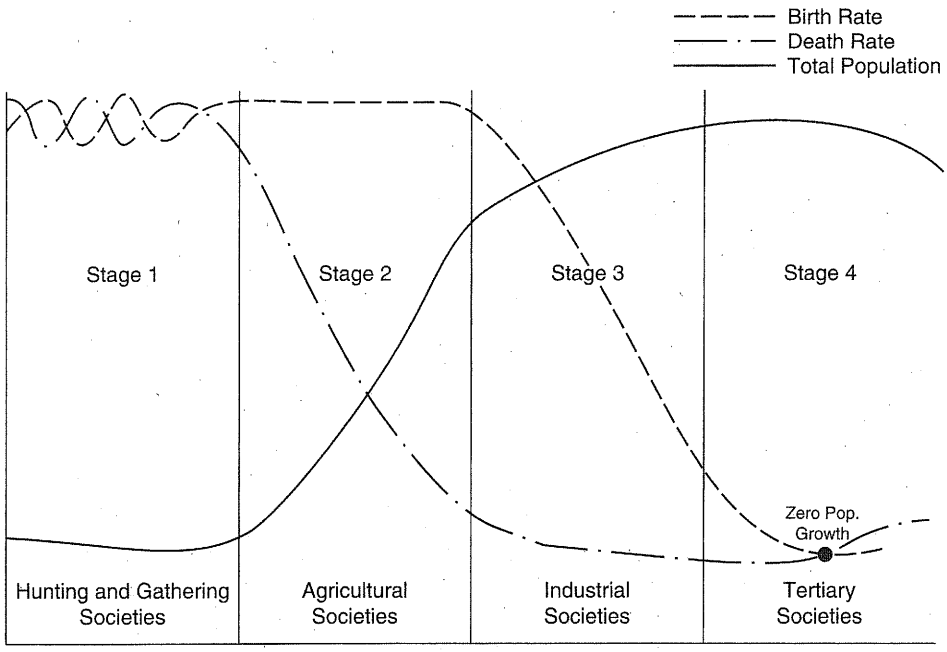

Figure 4.2: Demographic Transition Model.

Stage 1: Hunting and Gathering Societies

A hunting and gathering society characterizes stage 1 of the Demographic Transition Model. During this stage, a society has a low total population with fluctuations in both the birth and death rates. When the birth rate is high, the death rate is low, and vice versa.

These variances in the birth and death rates are a natural occurrence and still take place today. When food sources are plentiful and economic times are good, people have more children. When parents are more optimistic about the future, the result is an increase in the birth rate. The reverse is also true. When economic times are poor, parents are more pessimistic about the future and have fewer children. Baby booms and busts are heavily dependent upon economic conditions.

Because food sources are sporadic in hunting and gathering societies (they depend upon herd animals for food), people generally will not have many children for fear of starvation. Thus, population levels during stage 1 remain low.

No countries are in stage 1 of the Demographic Transition Model today. However, some societies, such as the Aborigines of Australia and the Bushmen of Namibia, still practice hunting and gathering. Both of these populations have remained low for centuries owing to their unstable food sources.

As humans progressed agriculturally, food sources changed. Instead of relying on animals or seasonal vegetation for food, people began experimenting with farming. This process was known as the First Agricultural Revolution. Although the process took time to begin and accelerate, it was quite significant to the human population. Once people began planting crops and raising animals, they had some consistency in food production. This change helped to stabilize populations, an essential factor in the transition of people from nomadic hunters to sedentary farmers.

Stage 2: Agricultural Societies

Stage 2 of the Demographic Transition Model, agricultural societies, sees unprecedented population growth. Birth rates stay high, but death rates decline sharply in this stage because of more stable food sources and the diffusion of modern medicine. This imbalance between the birth and death rates leads to a sharp increase in the total population of a society.

During stage 2, the S-curve, reflecting the total population number in the Demographic Transition Model, begins to take shape. As you can see from Figure 4.3, total population begins to increase dramatically, eventually stabilizing in stage 4, thus creating an S-shaped curve.

As a country moves into stage 2, the majority of people are involved in farming. These are usually subsistence farmers who are simply trying to feed their families. Stage 2 economies are very basic and use very little technology. Within stage 2 countries, a traditional family structure is valued. Men usually work in the fields, while women stay at home and raise the children. Having many children serves an agricultural society's primary purpose, to possess a sufficient labor force on the farmsteads. In agricultural societies, it is not uncommon for families to have ten or more children. As the children get older, they become workers on the farm, dramatically increasing productivity.

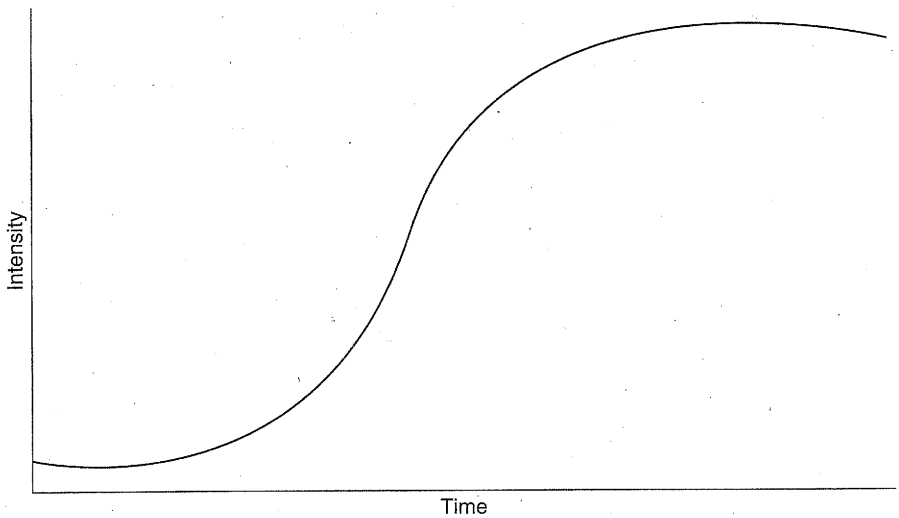

Figure 4.3: World Population Growth: S-Shaped Curve.

Another reason for having so many children is that they are often seen as a source of security. As people age, they become more dependent upon others, but government structures in stage 2 countries aren't set up to provide public welfare. The elderly often have no form of support outside of individual wealth. Many people work simply to eat.

The overall death rate continues to fall during stage 2. One of the reasons for this has already been mentioned—a more stable food source allows people to live longer. In addition, advances in medical technology as well as the increased effectiveness and availability of medicines allow more people to live healthier and longer. Such advances and medicines cure many of the ailments that devastated populations in prior generations.

Many African countries are still in stage 2 today. You can tell that a country is in stage 2 of the Demographic Transition Model by comparing its birth and death rates with the current world average birth rate (21) and death rate (9). In a stage 2 country, both the birth rate and death rate are higher than the world averages. For example, Angola, located in Central Africa, had a 2006 birth rate of 49 and death rate of 22, both well above the world averages. Liberia is another good example of a stage 2 country with a birth rate of 50 and a death rate of 21.

In both Liberia and Angola, the majority of the population is involved in subsistence agriculture. In addition, life expectancy is generally very low in these countries. Only 2 percent of Angola's population is above the age of 65. Sanitation and education are rarely provided, especially in rural areas.

In stage 2 countries, women often have more babies to offset the high infant mortality rate. **Infant mortality rate** is the number of babies per 1,000 that die before their first birthday. **Total fertility rate** is the number of babies that an average woman delivers during her childbearing years. In many developing countries, the total fertility rate is high and may exceed eight children.

It is also important to note that some countries may enter and exit a stage in the model relatively quickly, while some countries get stuck in a stage for a long time. Some countries, like the more developed European countries, stayed in a stage 2 economy for 50 to 100 years before moving into stage 3.

Stage 3: Industrial Societies

A stage 3 country is characterized by a more industrial society. Initially the **Industrial Revolution**, which began in the mid-1700s in Europe, spurred many European countries to adopt a more mechanized system of farming. As a result, these countries' populations grew dramatically (stage 2) from the improvement in the overall quality of life. This move from an agricultural to an industrial society dramatically changes many aspects of a country, including its demographics (movement from stage 1 to stage 3).

Mass production begins to take shape in factories located in urban areas. Key reasons for declining birth rates in this stage are that the reliance on children for labor decreases and that children become more of a liability than an asset. The assembly line method of production takes form, and children are often not allowed to work owing to government restraints on child labor. In addition, women enter the workforce in greater numbers, gaining career opportunities that often motivate them to delay having children for several years. This reduces the fertility rate of a country.

As a society further develops its economy, more people are involved in the production of goods. The number of factories increases, meaning that more and more people move off the farm and into urban areas for manufacturing jobs. Increased pay for factory jobs and less reliance on the unpredictable whims of nature that affect farmers also support a more stable economy.

During the early 1900s, much of Europe and the United States entered stage 3. Many of the countries in Central and South America are currently in stage 3.

During stage 3, a country's birth rates and death rates will be around the world averages. In a stage 3 country, the birth rate starts out high, persisting from stage 2, but begins to drop sharply. At the same time, the death rate continues to fall. There are several reasons for this, including continuing improvements in medicine and inoculations becoming more common. In addition, the quantity and quality of food increases, as it is now being produced by a more mechanized system of farming. Countries at the end of stage 3 will have average to low birth rates and average to low death rates.

A country like Bolivia, with a birth rate of 31 and a death rate of 8, is at the beginning of stage 3. The high birth rate indicates the country has just entered stage 3. The low to average death rate indicates some development within the country. In comparison, a country like Argentina, with a birth rate of 18 and a death rate of 8, is well established in stage 3. The low birth rate indicates a relatively urbanized and industrialized society, where dependence upon farming for primary employment has become less important.

Stage 4: Tertiary Societies

Conditions permitting, countries will eventually move into stage 4 of the model, which is characterized by a more tertiary or service-based economy. The birth rates and death rates become almost equal in stage 4. When the crude birth rate equals the crude death rate, the phenomenon is called **zero population growth**.

During stage 4, a country moves away from its reliance on industry to a more service-based economy. More people are involved in selling products than in production. For example, more people are selling or fixing automobiles than producing them. Countries in stage 4 do

not always have successful economies. There are other factors that determine the success of an economy.

Many European countries have entered into stage 4 in the Demographic Transition Model. Countries like Belarus, for instance, have a birth rate of 9 and a death rate of 15. Poland has zero population growth with both a crude birth rate and a crude death rate of 10. In many Eastern European countries, the crude death rate is relatively high because of the lack of environmental standards established during the communist era in the mid-1900s; pollution on a massive scale led to increased health problems in many areas.

Total fertility rates in a stage 4 country are at or below 2, the natural increase rate (the rate required to replace the two parents). When the total fertility rate is below 2, then the country experiences a loss of population. Several countries in stage 4 are trying to offset this lack of population growth by offering incentives for having children. A toy company in Japan recently offered to pay some of their employees to have children. Without children, the toy company feels that its future is threatened.

During stage 4, children become even more of an economic liability. In addition, women have more access to birth control options, also limiting the number of children being born. Although the population level is high, its growth has flattened out.

POPULATION STRUCTURE

Demography is not only concerned with population growth but also the characteristics of the population itself. How old are the people? What is the gender breakdown of the population? Demographers study all the characteristics of populations all around the world.

One important characteristic of a country's population is its breakdown by age and gender. The **sex ratio** is the number of males compared to females in a population. One of the easiest ways to identify a population's sex ratio is by analyzing a **population pyramid**, a tool that geographers and demographers use. Population pyramids chart populations on a graph. These graphs break down the population based on both gender and age, and it can then be analyzed in terms of the Demographic Transition Model to determine in which stage a society is located. Age distribution is also presented in population pyramids, with individual brackets demonstrating age groupings.

Population pyramids are also a good way to analyze population projections. **Population projections** use demographic data to determine future population. By analyzing birth and death rates, one can reliably determine what the population of an area will be 30, 50, or even 100 years into the future, assuming that the governmental structure and cultural customs remain the same.

Population pyramids of less developed countries (LDCs) have a wide base, because the majority of the population of an LDC is under the age of 15. There are also few elderly people owing to the lack of sanitation and medical care.

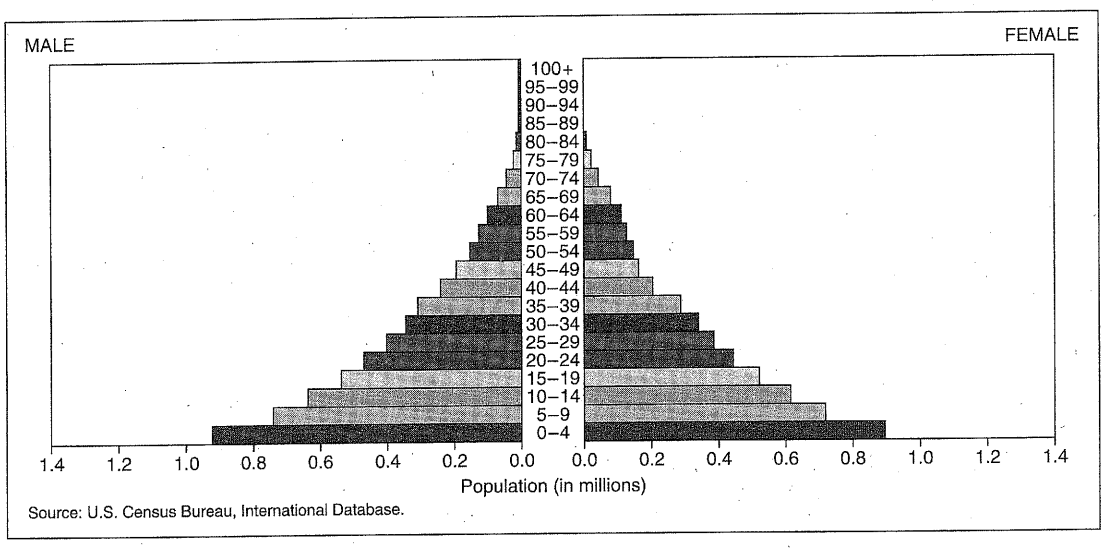

Figure 4.4: Population Pyramid—Angola 2000.

The population pyramid shown in Figure 4.4 is from Angola in 2000. The center numbers are the age groupings of the population. The numbers on the bottom are the population totals of each age group. In a stage 2 country, the base is very wide and the top very narrow. A large part of Angola's population is under 15. These children are dependent upon those older than 15, who can enter the workforce. When the number of people in the workforce, those ages 15 to 64, is low, very few people are available to support the younger population, putting an extra burden on an already strained government. The **dependency ratio** says that those aged 0–14 and over 65 depend on the workforce for support.

Countries that are in stage 2 have what is called demographic momentum. **Demographic momentum** is a continued population increase as a result of a large segment of the population being young. These young people will eventually produce more offspring than their parents' generation, because there are so many of them, thus continuing the demographic momentum. These countries are likely to see monumental population growth for a minimum of 50 years and likely longer.

In a stage 3 country like Argentina, shown in Figure 4.5, there are more adults and elderly in the population and fewer children as compared to a stage 2 country. This makes the pyramid look less bottom heavy, and the population is distributed by age a little more evenly. There are more older people because of improvements in medical care. As the stage 3 society becomes more industrialized, it becomes more urban and offers more access to health care.

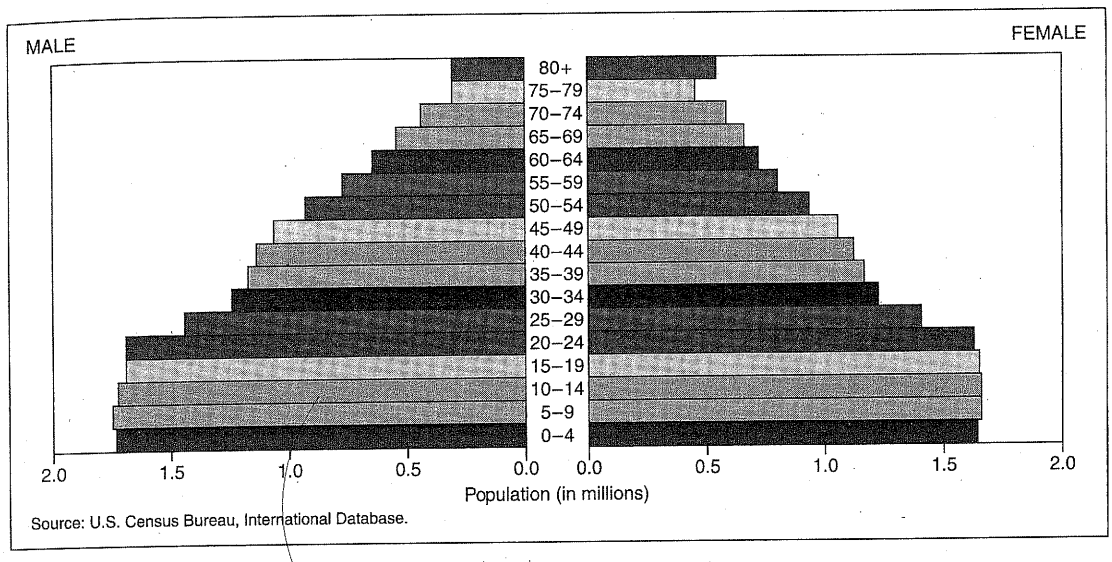

Figure 4.5: Population Pyramid—Argentina 2000.

In a stage 4 country, the percentage of children decreases dramatically, and the workforce segment of the population actually bulges, with 20 to 50 year olds becoming the majority of the population. There are more parents than children. In stage 4, the population begins to see a decrease in total population growth. When the natural increase rate falls below 2, the country begins to lose population, a process called negative growth.

A large percentage of the United Kingdom's population, shown in Figure 4.6, is of childbearing years, yet people are choosing not to have many children for various reasons. Children are

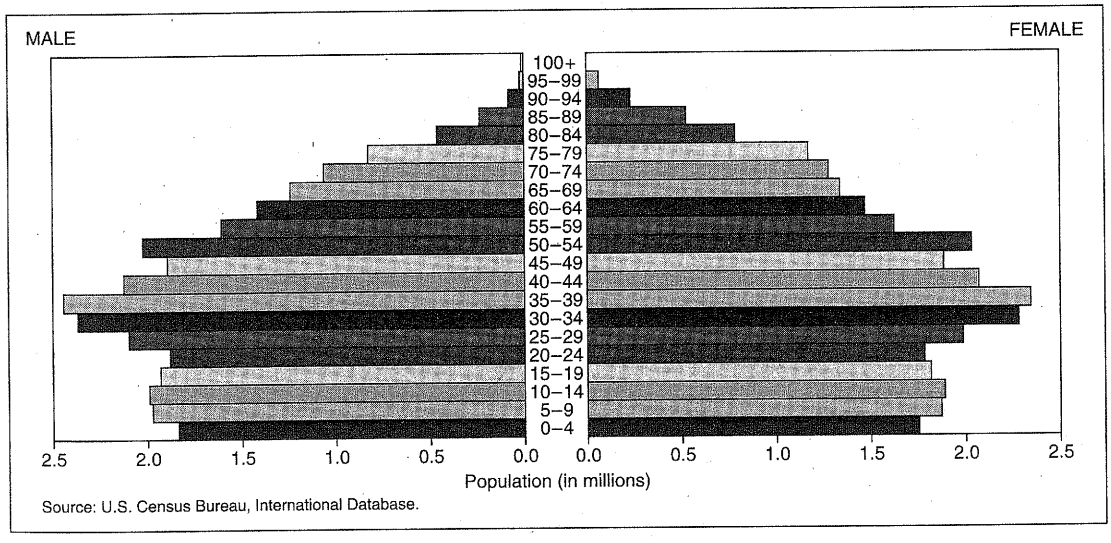

Figure 4.6: Population Pyramid—United Kingdom 2000.

becoming more and more expensive, and the majority of the population lives in urbanized areas. Furthermore, people are living longer as a result of continued improvements in medical care.

AP EXPERT TIP

Take a moment to visualize or to sketch each of these population pyramids so that if you were to see them on the test, you could recognize them immediately. You might also scan your textbook for examples of various population pyramids.

Population pyramids do not only have to be used on a national scale. They can be used to describe cities or even neighborhoods. A population pyramid for a retirement community, which has very few children and a large percentage of residents over the age of 65, would have an upside-down look to it. Mining or fishing villages may have a large percentage of males, due to the job opportunities they offer. Communities where many of the workers are immigrants will often have more males than females. Villages hit hard by war may have an imbalance toward females, because many of the men have been killed in combat.

Assuming that the numbers are correct, population pyramids accurately represent a nation's, city's, or community's demographics in an easy-to-read picture. Having this information allows governments to develop policies and allocate resources to meet the current and future needs of the population. For example, communities with a higher percentage of children ages 0 to 4 will see those children soon move into the educational system. New schools will need to be built and new teachers hired. If the population consists mainly of elderly persons, on the other hand, more health care options will be needed.

Birth and Death Rates

The crude birth rate is the number of births per 1,000 people in a population. The crude death rate is the number of deaths per 1,000 people in a population. The average world crude birth rate is 21 per 1,000 people, and the average death rate is 9 per 1,000 people. The **demographic equation** is global births minus global deaths and determines the population growth rate for the world. Currently, the inequity between birth and death rates means the global population is growing by about 80–100 million people per year.

Another statistic that affects a country's population is the **infant mortality rate**. This is the number of babies that die within their first year of life. Like crude birth and death rates, the infant mortality rate is usually given as a rate per 1,000 people. More developed countries have lower infant mortality rates than less developed countries. A more developed country may see an infant mortality rate below 10 per 1,000, while in less developed countries, the infant mortality rate may approach 150 per 1,000. A high infant mortality rate is a huge hindrance to a population. When 15 percent of your population is dying before the age of 1, it is indicative of other social and developmental problems. Women often have more children, uncertain of

how many infants will survive and knowing that children will largely determine the family's financial stability as the parents age.

The opposite of the infant mortality rate is the **natality rate** (which is another term for the birth rate). This is the number of live births per 1,000 people in the population. The natality rate plus the infant mortality rate always are given per 1,000.

A major population problem in the world is that the crude birth rate in many less developed countries is far outpacing the crude death rate. The result is a world population that has grown extremely fast within less developed countries for the past half century. One of the main reasons is that people in these countries tend to lack adequate birth control often due to low income, religious intolerance, lack of social status, inadequate education, or poor transportation.

Much of the less developed world lives in rural villages, generally the poorest areas of the world, and simply does not have access to birth control measures. Traveling to an urban area may take a week or longer, and to be away from the children and the work that the farm requires is an opportunity cost that families cannot afford. In more developed countries, people have greater access to birth control options and are more likely to use them, reducing the number of births.

Religion also plays a major role in the lack of birth control in some countries. Many religions restrict or even forbid birth control options for their followers as a part of their fundamental beliefs.

Progress is slowly being made. There has been a diffusion of fertility control in recent years. Much of the developed world, which has transitioned into stages 3 and 4, has the access and the resources to purchase birth control and is spreading it to a larger number of women and men across the world. Although there are still many obstacles to overcome, such as distance and money, more people today have access to birth control options than ever before in human history.

This brings up the issue of gender as a means of population control. As a general rule, the greater the education level of a woman, the fewer children she will have. Because children are often seen as more of an economic liability, the woman may opt for career advancement over having a larger family.

In countries where the gender gap (the gap between men and women in terms of status, education, etc.) is high, women are more likely not to have certain rights that men possess. For example, in many countries, women do not have the right to **enfranchisement** or **suffrage**, which means the right to vote. In much of the world,

AP EXPERT TIP

Note how the discussion in the next three paragraphs links gender to population, economic development, politics, and culture. Noticing such patterns allows you to anticipate test questions, see an example of synthesis across topics, and to see the importance of the topic of gender in human geography.

patriarchal societies dominate. In these societies, women are usually subjugated to men, treated as second-class citizens, and have less control over their birth control options. In these societies, the more children that a man sires, the greater his status within the community. This leads to an abundance of children, despite the wishes of the women.

In societies where **dowries** are still present, the woman's family must pay the groom's family for the right to marry the son. Therefore the dowry system puts more value on men and de-emphasizes women. In some extreme cases, infanticide of female babies occurs if a family in poverty cannot afford to pay a future dowry. Many countries, including India, have outlawed the dowry as a means of paying for weddings, but cultural traditions tend to die hard. In some cases, the groom's family will kill the bride because of her inability to pay the dowry, a process referred to as **dowry death**.

Various governments around the world have adopted measures to control the birth and death rates in their countries. Some have been more successful than others. One of the most successful measures of governmental birth control has been enacted in China. In 1979, China adopted its one-child policy to curb its population growth. Since 1979, China has seen a drop in its natural increase rate, total fertility rate, and birth rate. However, despite its successes, a problem with the one-child policy is that it has not been adopted by all minority groups evenly across the country. In western China, where subsistence agriculture is practiced, minority groups are still having more children out of economic necessity.

Today in China, it is possible to have more than one child. China is a very proud society where history plays a vital role in the daily lives of its citizens. One of the greatest honors one has is to pass down the family name to one's children. This must be done with a male child. If your first-born child is a female, you are allowed to try to have a second child, but you will be taxed at a much higher rate. Some have suggested that the tax on the second child may be as high as a year's salary for the average worker. If your second child is also a female, you may try for a third, but you are taxed even more. After three children, the government will not allow you to have any more children. Only the wealthy in China can afford to have more than one child.

Even though these population controls have been enacted, the social and human rights elements have been a concern for many human rights activists, who feel that the treatment of female infants is less than satisfactory. Infanticide and abortions, particularly of female children and fetuses, have risen since the policy was enacted in 1979. China may have controlled its population growth in the meantime, but it may see some other negative demographic factors, such as an imbalance in the sex ratio.

Attempts by other countries to control their populations have not been as successful. Some countries, for example, have attempted the forced sterilization of their citizens, often of their minority groups. Because this has only been done on a small scale, it has had very little impact on the population as a whole. Measures must be applied to an entire country for them to be effective.

POPULATION EQUATIONS AND SCIENTIFIC METHODS

Doubling time is the number of years that it takes for a country to double its population. The lower the number, the faster that country will double its population. Countries with a high natural increase rate will double their populations faster than countries with a low natural increase rate.

An equation for approximating doubling time is as follows: doubling time = 70 ÷ growth rate. Thus, if a country has a natural increase rate of 7 percent, its doubling time will be approximately 70 ÷ 7 = 10 years. If a country has a 3.5 percent growth rate, its doubling time is about 20 years, and a 1.75 percent growth rate gives a doubling time of about 40 years. If a country has a 1.75 percent growth rate, it is considered to be increasing its population very rapidly.

If you are given the natural increase rate of any population, you can determine its doubling time to within a couple of years. Morocco, a country located in the northwest of Africa, is 51 percent urbanized. Its birth rate is 21, and its death rate is 6. It is a stage 3 country, in part owing to regulations established by the Islamic religion. Its natural increase rate is 1.6 percent. The doubling time can be figured out as being around 65 years for Morocco.

This can be done for any country that has a natural increase rate. If the country is losing population, like many of the countries in Eastern Europe as well as the country of Japan, there obviously is no doubling time, because a country cannot double its population when the population is declining. Many countries in Europe are experiencing doubling times approaching 700 years with a 0.1 percent natural increase rate. The fastest doubling time in the world is currently located in the Gaza Strip section of Israel (Palestine); Gaza's doubling time is 15 years; its natural increase rate is an astounding 4.6 percent.

Demographers use the mathematical relationship between doubling time and natural increase rates to calculate growth rates and expected increases in the total population, usually with a high degree of accuracy, assuming that governmental structure and cultural practices of the country do not change. If these factors change, they can dramatically alter the natural increase rates.

To slow down its **demographic momentum**, a country can slow its growth rate in one of three ways. Each of these three methods—imposing government laws, decreasing the birth rate, and increasing the death rate—has its pros and cons.

By decreasing their birth rates, countries can slow down their population growth and natural increase rate. This can be done by law, as in China. It can also be done through the distribution of birth control. The United States has tried making birth control accessible to the masses through free distribution. Also, U.S. high schools teach birth control methods, including abstinence, as a means to reduce the birth rate among teenage girls.

Critics of reducing the birth rate say that making birth control available in this way is not working. Although the pregnancy rate in the United States has been decreasing since its high point in 1990,

teenage pregnancy rates are still high. In fact, the United States has the highest teenage pregnancy rate among developed Western countries.

Another means of controlling population is to increase the death rate. By increasing the death rate, population control would be achieved. Increasing the death rate does not mean the killing of innocent civilians. Rather, it suggests that those with terminal diseases not be given the care they need to sustain their lives. This morbid approach goes against many doctors' codes of ethics. Doctors take the Hippocratic oath, vowing "never to do harm to anyone."

However, proponents of this argument suggest that we are spending countless billions on medicines for the clearly terminal that could be used to assist others with manageable diseases, like malaria. Every person is mortal. This mortality principle has led some to this question: if the Earth has a limited number of resources, why are we spending them on people with no hope of survival? Proponents argue that it makes more sense to let one person die today rather than let the natural increase rate continue, see the environment reach its carrying capacity, and experience mass starvation.

Recent studies have suggested that this next generation is the first generation that will live fewer years than their parents. Most can agree that we eat more "junk food" than ever and that obesity is a problem in much of the developed world, especially in the United States.

The bottom line is that the world must find some means of sustainability for the population. **Sustainability** is the saving of resources for future generations to allow them to live at the same or higher standard of living than the population today.

HISTORICAL AND GLOBAL PERSPECTIVES

Until recently, countries have seen an increase in population as a positive event. A greater population means a higher tax base, increased military capability, and more workers for either farming or industrial jobs. Only in recent decades have some areas of the world tried to reduce their overall growth rates.

For much of the world, including today's more developed countries, the population was constant, if not growing minimally, until the mid- to late 1800s. Once many countries in Europe reached stage 3, the population began to settle down. The less developed world is now seeing the highest growth rates and natural increase rates.

By looking at the top 20 countries in the world in terms of total population, shown in Figure 4.7, one notices that Asia contains the greatest number of countries on that list. Southwest Asia and Africa have the highest natural increase rates. One country, in particular, is of concern to demographers. The total population of Nigeria is close to reaching the top of the list in terms of total population. The doubling time of Nigeria as of 1998 was 23 years. This country will see its population of 134.5 million double within the next 30–40 years.

Countries like Nigeria face the greatest population growth problems. Because the carrying capacity of Nigeria may not be able to support its population, it will either need to increase its agricultural productivity exponentially or begin importing food. In addition, Nigeria will need to increase its boundaries, or it will likely have a refugee crisis due to mass starvation. Its 2.4 percent natural increase rate is an astonishing number and poses a challenge for the countries around Nigeria and the rest of Western Africa.

Bangladesh is another country that is seeing a population crisis. Bangladesh is the size of the state of Iowa. As of 2006, its population was approaching 150 million. In comparison, Iowa's population is around 4 million. Bangladesh's natural increase rate is 1.9 percent. Growing at a rate of 2 percent each year will double its population in 35 years. With more and more countries facing such population crises, the world needs to assess its role in reducing overpopulation.

AP EXPERT TIP

The comparison here between Iowa and Bangladesh compares a known (Iowa) with something that may be unknown (Bangladesh). Try a comparison with other U.S. states and world countries.

20 Most Populated Countries

Country	Population in 2006
1. China	1,311.4 million
2. India	1,121.8 million
3. United States	299.1 million
4. Indonesia	225.5 million
5. Brazil	186.8 million
6. Pakistan	165.8 million
7. Bangladesh	146.6 million
8. Russia	142.3 million
9. Nigeria	134.5 million
10. Japan	127.8 million
11. Mexico	108.3 million
12. Philippines	86.3 million
13. Vietnam	84.2 million
14. Germany	82.4 million
15. Egypt	75.4 million
16. Ethiopia	74.8 million
17. Turkey	73.7 million
18. Iran	70.3 million
19. Thailand	65.2 million
20. France	61.2 million

Figure 4.7: The World's 20 Most Populated Countries—2006.

The majority of the world's most populous countries come from Asia. Almost 60% or 3 out of every 5 persons on Earth is of Asian decent. The most rapid population growth is occurring in the sub-Saharan African region.

Why are some countries caught in stage 2 or stage 3 of the Demographic Transition Model, while others are able to move beyond that, to tertiary or even quaternary economies? The answer ties into some of the most fundamental aspects of geography. Some economic systems have allowed for more freedom to assist entrepreneurs in developing products that promote economic success. Most of Europe and the United States fall into this category. When economies change their basic functions, demographics within the country change to correspond with the economic trend.

China is a good example. The 1979 law, which forbade Chinese couples to have more than one child, was enforced by the government. By using government control over family structures, China has seen some success in population control. Also, China's economic policy for the last decade has pumped billions of yuan into the economy to give it a boost. As a result, the Chinese economy is one of the strongest in the world, seeing double-digit annual growth rates. As China has moved into stage 3, the movement from an agricultural to an industrial society has not affected couples' family-planning decisions because, for the most part, they already can only have one child.

Many of the available world demographic statistics are given in terms of *with* and *without China*. Because of heavy government influence, China doesn't really follow the Demographic Transition Model. Several national magazines, including *Newsweek* and *Time*, have focused major news stories on the Chinese economy. Industry is labor intensive, because of the population base that China possesses, and long hours are not uncommon. Because one out of every six persons on Earth is Chinese, including or excluding China can obviously vary the statistical accuracy of any set of world demographic data.

The United States was in stage 2 of the Demographic Transition Model for all of the 19th century. Not until the early 1900s did the United States enter stage 3. This is when the Industrial Revolution and mass industrialization took hold in the United States. Henry Ford's assembly line method of producing automobiles had a ripple effect on almost every other industry in North America, moving people off the farms and toward better and more reliable incomes.

There is a debate about whether the United States is in stage 3 or stage 4 of the model. The U.S. economy is tertiary or service-based, yet the discrepancy between the crude birth rate and the crude death rate leads many demographers to categorize the United States as stage 3. The difference between the crude birth rate and crude death rate is due to the immigrant families in the country. Many of these people are still having multiple children for cultural reasons, as a means of social security, and as extra help as they work their way toward the American dream.

Most demographers can agree that the United Kingdom is in stage 4. The United Kingdom has a very low growth rate, and the majority of its people are working in some type of tertiary or quaternary sector of the economy. Having a low discrepancy between the crude birth rate (12) and the crude death rate (10) is evidence of being a stage 4 country.

Great Britain entered stage 3 in the 1800s. The Industrial Revolution began in the mid-1700s, and by the 1800s, Great Britain had come into the modern age. After World War II, industry took a backseat to tertiary activities in Great Britain. Even today, some cities in Great Britain are still reeling from the closing of the mega-factories that used to employ thousands of people. Many of these workers have ended up on government assistance due to a lack of industrial jobs. Major urban areas, such as London, have relied more on financial or tertiary economic pursuits than on industrial enterprises.

THE J-CURVE

Ian Bremmer developed what he called the J-curve. The **J-curve** places countries on a scale based on their *openness* and *stability*. The movements of countries on this scale depends largely on their economic progress.

A country can vary between scale elements; it can be relatively free but not very stable. For example, elections may not mean a lot if coup d'états eventually throw the leaders out of office. On the other hand, a country may be tightly controlled but very stable. For example, the former Soviet Union was very stable for most of its history, but its dominating government structure limited the freedom of its inhabitants.

The political stability of a country depends upon its economic success. For instance, countries that depend upon selling their natural resources are successful when the prices of those commodities are high. When prices dip, however, stability decreases, and riots and coups are common.

CAUSES OF POPULATION INCREASE

Four primary factors lead to an increase in population:

1. Medical advances
2. Quantity and quality of food
3. Ethnic and religious issues
4. Economic issues

Medical Advances

Medical advances are one of the biggest reasons for an increase in population because they directly affect the death rate. By decreasing the death rate, a country automatically sees its population increase as long as birth rates are constant. Because birth and death rates determine natural increase rates, changing one of the rates affects the overall population growth of a country.

New medicines and inoculations have allowed millions around the world to live longer and healthier lives than ever before in human history. For hundreds of years, explorers were afraid to enter the inner reaches of Africa and South America for fear of malaria. Today, new prevention medication keeps people from catching the disease, and new treatments allow people to live productively for many years after having the disease.

Disease diffusion, which is simply the spread of disease, does not occur as widely as it used to. Although some viruses, such as HIV, SARS, and avian flu, still dominate the news, medicine has eliminated smallpox from the map and made progress against polio, malaria, and the plague.

Quantity and Quality of Food

Increased food quantity and quality has had a dramatic effect on the population as well. Advances in agricultural technology have helped to feed billions of people around the world. The advancements in the technology of growing rice, for example, have allowed triple-cropping and increased production in Asia. The importance of rice in the Asian diet cannot be overestimated. Rice is a high-calorie food that provides energy for millions on a daily basis. Rice is eaten in all three meals of the day and is an essential staple crop in the cultures of billions of people around the world.

Ethnic and Religious Issues

Ethnic and religious issues also play a major role in population growth around the world. Many cultures forbid the use of any form of birth control. Some cultures in Africa believe that having relations with a virgin will rid a man of the HIV virus, although it actually risks infecting the young woman with the disease as well as possibly impregnating her.

Economic Issues

Economic issues are a good indicator of a society's population growth rate. If the economy of the country is fundamentally based on agriculture, the odds are high that the country has a high growth rate. If the economy is based on industry or services, chances are high that the population growth is minimal or even nonexistent.

CAUSES OF POPULATION DECLINE

Just as there are reasons for population growth, there are also factors that contribute to population decline. The three major factors that contribute to population decline are:

1. Natural hazards and disasters, including famines or plagues
2. War or political turmoil
3. Economic issues

Natural Hazards and Disasters

Natural hazards become disasters when loss of life and property are involved. From a population distribution perspective, millions of people live in areas that are subject to natural hazards. Many earthquake-prone areas, such as California, Japan, Turkey, and Pakistan, have large populations. Many natural hazards easily become disasters because of population growth, density, and distribution.

Natural disasters can kill thousands of people at a time. Recent earthquakes around the world have killed tens of thousands of people at a time. Many of the deadliest earthquakes occur in less developed countries because of the lack of building codes that would require structures to withstand tremors. Tsunamis, tornadoes, blizzards, and other natural disasters kill thousands more people every year but cause only a small percentage of overall worldwide deaths.

Famines and plagues lead to mass starvation and disease. Famines are usually caused by some type of natural disaster, such as a drought, which affects the food supply. When transportation systems are unable to bring in sufficient food, populations starve. Famine has killed tens of thousands of people in places such as Ethiopia and Sudan. Poverty and lack of health care can lead to plagues, which can also cause the lack of food production in a region.

War or Political Turmoil

Another factor that negatively affects population growth is war or political turmoil. In Cambodia during the 1970s, for example, the Khmer Rouge forced millions to leave the country or be killed. This exodus greatly affected Cambodia's population during this time. The Killing Fields of Cambodia have been well documented, and the effects of the political situation of the 1970s are still being felt in that country.

War leads to refugees, who flee for fear of persecution or death if they remain in the country. The ethnic conflict in Rwanda and Uganda resulted in a refugee crisis in central Africa that led to the deaths of millions of people on both sides of the conflict. The battles were so intense that some people say the rivers and creeks ran red with blood.

World War II directly affected the lives of millions of people around the world. Losing a spouse to war affects the entire family structure. In societies where wars have been fought, the male section of many population pyramids has been greatly diminished.

Economic Issues

Various economic issues contribute to population decline as well. The number one reason people move is for economic concerns. If there are no employment opportunities available in your area, you need to go where jobs are available. Such out-migration leads to a decrease in the population of certain areas. Much of the Great Plains region of the United States is experiencing out-migration as

a result of a lack of job opportunities. It's important to note, however, that migration does not affect population on a worldwide level.

IMMIGRATION, MIGRATION, AND REFUGEES

Migration is the movement of people. People may move across town or across the world, again for a variety of reasons. As a whole, the percentage of people who move a long way from their place of origin is relatively low.

People who move into a country or region are called **immigrants**. People who leave a region or country are called **emigrants**. Immigration is the influx of people into a particular region or location, whereas emigration is the outflow of people from a particular region or location. **Net migration** is the number of immigrants minus the number of emigrants.

Most people move at least once in their lifetimes. These moves are generally short in distance and rarely involve leaving the country. When migration does involve moving to another country, the destination is usually one of the major industrial centers of the new country. For example, if people move to Egypt, they are probably moving to Cairo. If people are moving to China, they are probably moving to Shanghai, Hong Kong, or Beijing. New York is known for its immigrant neighborhoods. These urban centers become magnets for immigrants.

Again, it is important to note that movement does not affect the world's population. Once the person is alive, their movement on the Earth does not affect the world's population, only a country's population.

AP EXPERT TIP

History, whether world, national, or family, is full of migration stories. Can you tell a migration story using the terms found on the following pages? Storytelling is a powerful tool for cultural survival and for learning and memory.

AP EXPERT TIP

An easy way to distinguish between "immigrant" and "emigrant" is to think about "into" and "exit." An immigrant comes into the country and an emigrant exits it.

THEORIES OF MIGRATION

Push and Pull Factors

A **pull factor** is a positive perception about a location that induces a person to move there. A **push factor** is a negative perception about a location that induces a person to move away from that location.

Both push and pull factors are based on an individual's *perceptions* of the area. A pull factor for one person may be a push factor for another. A good example of what could be considered both a push and a pull factor is climate. One person is tired of the cold weather. She doesn't like the major snowstorms that hit her area. She is tired of getting her automobile stuck in the snow. She decides to move to

a warmer climate where it does not snow. For this person, the cold weather is an environmental push factor.

For another person, the cold weather is a pull factor. He loves to ice skate and sled with his children down the hills in the winter. He also loves to downhill ski. This person is willing to put up with the inconveniences of the snow so as to enjoy the amenities of the climate. For this individual, the cold weather is a pull factor.

There are three different types of push and pull factors:

1. Economic
2. Political
3. Environmental

These three factors are all reasons why people would want to move to a certain location or away from a location, and each can be so strong that people are willing to sacrifice a loss in the short term for monetary, environmental, or political gain in the long term. They are willing to undertake the journey, sometimes thousands of miles, for the opportunity for freedom, employment, safety, or some other positive aspect of another location.

Economic Factors

As previously noted, economic pull factors are the number-one reason people move. Often, they relocate for new employment opportunities. If an area opens a new factory or is in need of more employees, more people may move to the area to fill those available jobs. If the jobs are high paying, people may be willing to relocate at considerable expense.

Economics can also be a push factor. Downturns in the economy frequently lead to business layoffs and shutdowns. Without jobs, people cannot support themselves or their families, so they must go where there are enough jobs. In this case, the economy forces the person to leave an area in search of new employment. Economics has now become a push factor.

Political Factors

Other push and pull factors are political. Sometimes, people are forced to leave a country for fear of persecution or even death. **Refugees** are people who are forced to flee their homeland for such reasons, to seek some type of asylum in another country. Sometimes refugee movements are on a massive scale, with tens of thousands of people forced to flee their homelands.

The recent migration movement of the Hmong population into the United States is an example of such a refugee movement. The Hmong fought side by side with U.S. soldiers during the Vietnam conflict. When the United States left, the Hmong were forced out of the country for fear of persecution by the new, anti-U.S. government. Thus, the Hmong became a refugee group, and the

stories of the Hmong crossing the Mekong River are heroic. Many of the migrations were done in the cover of darkness for fear of being shot by enemy soldiers, and many of the recent immigrants to the United States lost close family members in the move away from their homelands.

Refugees should not be confused with **forced migrants**, who are literally forced out of their homes for either political or environmental reasons. Most of the Native Americans in the United States were forced out of their areas and moved to reservations during the 1800s. The Trail of Tears is an example of a forced migration, when Cherokee Indians from Georgia were forced to move to Oklahoma in one of the largest forced migrations in U.S. history; many died along the way.

The Jews who emigrated during World War II were refugees. Jews from around Europe fled the Nazis for fear of death. Many countries refused to take the Jews. Other countries, like Denmark and Sweden, were havens for Jews as they tried to escape imprisonment and torture. However, Jews whom the Nazis forcibly moved into ghettos, as in Warsaw, Poland, were forced migrants.

There have been dozens of refugee crises around the world during the past 50 years. One of the largest refugee movements occurred in Rwanda and Uganda during the 1990s. The conflict between the Hutus and the Tutsis caused the deaths of hundreds of thousands of people on both sides. Brutal retaliation led to further conflicts. Refugees of this war fled to Congo and other neighboring countries to escape the bloodshed, putting social and economic pressure on these countries and spreading political instability.

The same type of refugee movement occurred in the former Yugoslavia during the 1990s. The breakup of the former Yugoslav Republic led to increased refugee movement into neighboring countries, such as Albania. This type of refugee movement occurs on a daily basis in many locations around the world. People leave their homelands fearing persecution and death. In addition, some people leave to search for freedom, opportunity, and a new life. They want to enter new countries for the opportunity to better their economic situation and to have the political freedom to say and do things that they only dreamed of in their homeland.

Environmental Factors

The last push and a pull factors are environmental. This type of migration is usually **voluntary**. In other words, people have the choice to move to a warmer climate or a climate that better suits their lifestyles. Many retirees in the United States have voluntarily moved to Florida for the warmer climate and amenities that Florida can offer them.

The southern portion of the United States has seen a large in-migration during the previous four decades. This area, known as the Sun Belt, shown in Figure 4.8, includes states extending from North Carolina to Southern California. It has seen dramatic growth during the latter half of the 20th century. The invention and mass use of air-conditioning has made warmer areas more livable in the summer. Many new residents are retirees, but many have moved for economic opportunities as well.

Many see North Carolina, South Carolina, and areas extending into Georgia as positive places to move. Citizens of these states can participate in summer activities practically year-round. For example, golf in Florida is a year-round industry.

Many job seekers moved from the Rust Belt to the Sun Belt during the 1980s and 1990s. This movement was caused by the closing of many factories in the Northeast and Great Lakes regions. These workers moved to where the new factories were being built. Honda and many other car manufacturers have huge industrial plants in the Sun Belt; Honda builds many of its cars in Alabama, and BMW builds some of its cars in South Carolina.

This Sun Belt phenomenon has skipped several locations. Mississippi, Louisiana, and Alabama have not seen the immense growth of other Southern areas. Other areas that have been skipped in the Sun Belt include sections of western Texas and eastern portions of New Mexico. Part of this is due to poor economic situations. Also, the relative lack of education of the population has negatively impacted these areas' economic growth.

Many communities in the South have offered incentives for people to move to their areas. By offering tax breaks for companies and increased recreational opportunities (parks, sports arenas, etc.), these towns and cities in the Sun Belt have marketed themselves to others areas around the country. This concept is referred to as **place utility**.

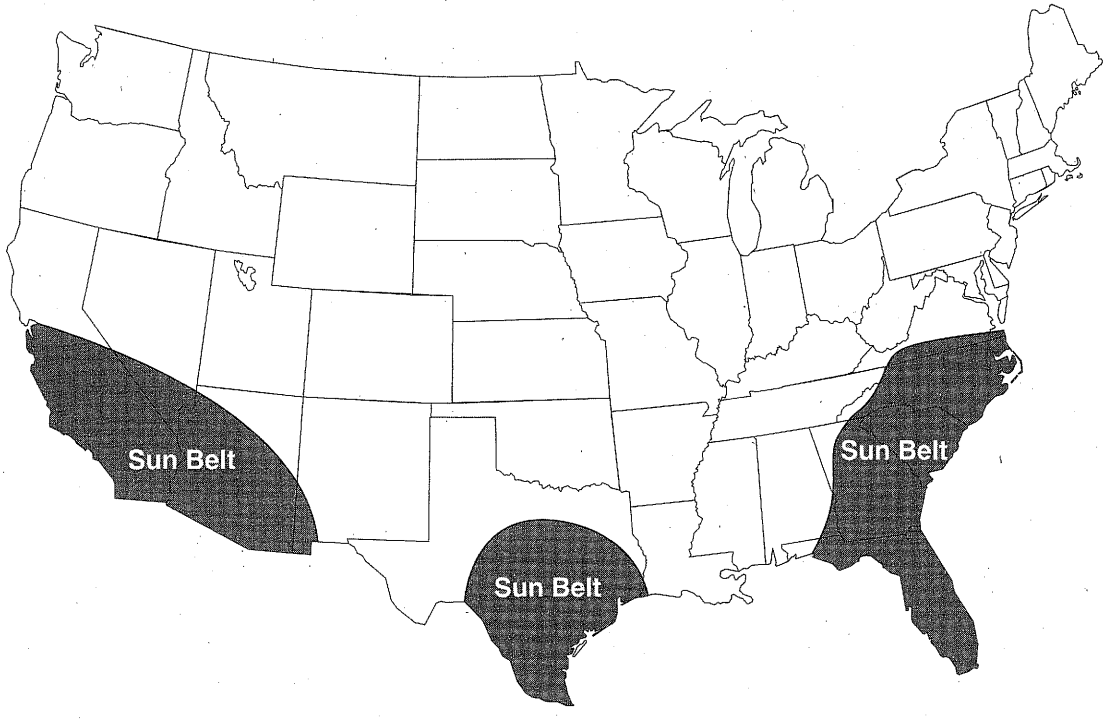

Figure 4.8: Sun Belt Areas in the United States.

Several commercials about specific communities have run nationally around the United States. Sioux Falls, South Dakota, has run advertisements throughout the Upper Midwest, presenting itself as the ideal place for your business to be located. This marketing has attracted hundreds of new employment opportunities to a town that is growing already.

Recreational opportunities abound in colder climates as well, but some people are averse to bundling up in winter jackets and wind chills well below zero. Again, an individual's perception of an area determines its attractiveness to them.

Another area in the United States that has seen growth due to its environmental amenities is the mountain state region in the western portion of the country. These areas, including Utah, Colorado, Montana, and New Mexico, have seen population in some of their small towns double over the past several decades. People like the views and the recreational opportunities offered in these areas.

People have left specific areas owing to environmental factors. Hurricane Katrina, which hit the Gulf Coast of the United States, was the costliest natural disaster in the country's history. The storm wiped out communities and forced people out of their homes and into temporary shelters, sometimes located in cities hundreds of miles away. Residents of New Orleans were put on buses and sent to Houston, Texas, as well as other cities around the United States. Many of the people who left New Orleans have decided to make Houston their permanent home. In the Midwest, Americans also face natural disasters, such as tornadoes and floods.

Another example of an environmental push factor was the Dust Bowl, which occurred during the 1930s in the central Plains. At one time, this region was heavily cultivated, and in the 1920s, there was a saying among farmers that "the rain followed the plow." However, when the drought of the 1930s came, many farmers were forced to leave their homesteads and experienced economic ruin. The Dust Bowl resulted in one of the largest migrations in human history. The migration of people from Oklahoma was the backdrop for John Steinbeck's *The Grapes of Wrath*.

Outside the United States, the tsunami that hit the Indian Ocean in late 2005 devastated coastal communities and forced tens of thousands of people out of their homes and into shelters. Natural disasters are one environmental push factor that moves people away from where they live.

Raventein's Laws of Migration

E. G. Raventein studied migration trends and came up with ten laws of migration in 1885. Many of these generalizations are still valid today; however, women are now migrating internationally in larger numbers than men in some cases. In considering these rules, it is important is to think of examples for each law and to determine how valid the trend is now.

1. Most migration is over a short distance.
2. Migration occurs in a series of steps.
3. Long-distance migrants usually move to centers of economic opportunity (urban areas).
4. Each migration produces a movement in the opposite direction, or counter stream (although not necessarily of the same volume).
5. People in rural areas migrate more than people in cities.
6. Men migrate over longer distances than women.
7. Most migrants are young adult males.
8. Cities grow more by migration than by natural increase.
9. Migration increases with economic development.
10. Migration is mostly due to economic causes.

Migration Transition

Wilber Zelinsky put forth the idea that a migration transition occurs in conjunction with a demographic transition. For instance, when a country is in stage 2 (high growth) of the demographic transition, the excessive population growth encourages people to move to another country where there is more economic opportunity. Countries in stage 4 tend to have more economic opportunities because their economies are growing faster than their stable population. When a country is in stage 3 (moderate growth) or 4 (stable growth) people tend to move internally (interregional migration) for job opportunities. Examples of interregional migration include people in the United States moving from the Midwest or northeastern areas to the South for economic and environmental reasons. An example of this would be the Great Migration in the early twentieth century wherein African Americans moved from the south to the Midwest, northeast, and west to find jobs in industrial cities and escape racism. Other forms of migration, especially in the United States, include rural to urban, urban to suburban, and suburban to exurban or urban.

Human Capital

The Human Capital model of migration, developed by Larry Sjaastad in 1962, attempts to explain the major reasons why people migrate. This model basically states that people seek to improve their incomes over the course of their lives; therefore, people weigh the costs against the benefits of migrating. William A. V. Clark contributed to the explanation in 1986 with two observations: migration rates drop as people age since personal wealth is accumulated over time and the potential benefit of moving decreases with increased age. Secondly, Clark observed that psychological and

economic costs and benefits are considered before people make a major move—something Sjaastad overlooked in his initial model.

Life Course

Migration is impacted by major turning points in a person's life such as college, employment, marriage, having children, and retirement. Each of these events helps determine the decision a person makes with respect to migration. For example, the larger the a household, the less likely it is the household will relocate. Single people are the most likely to move, followed by couples, families with fewer children, and then families with more children or older dependents. However, larger families can encourage certain types of migration: when couples have children they tend to engage in intraregional migration in order to obtain more space for their growing family. The most frequent example of this in North America is urban-to-suburban migration within the same metropolitan area. Finally, many people in North America move when they retire from work. Warm and sunny states with limited tax burdens on retirees, like Florida and Arizona, have traditionally been favorite spots.

Socioeconomic Consequences of Migration

Migration impacts both the areas receiving migrants and the areas that the migrants left. Large numbers of migrants can change the socioeconomic nature of an area. Two examples of this in the United States are Miami, Florida, and Dearborn, Michigan. The culture of Miami and the surrounding area of south Florida changed significantly after the Cuban Revolution when many Cuban refugees immigrated to the area. Dearborn, Michigan, is home to one of the largest Muslim populations in the United States, because many immigrants from the Middle East came to the area in the 1920s to work in the automobile industry. As a result, Dearborn and surrounding communities form a unique cultural landscape. On the other hand, large-scale emigration can have a dramatic effect on the area that the migrants leave. For instance, a large percentage of men migrate to the United States for work from many rural Mexican villages, creating a dearth of men in those villages leading to a situation in which women become the head of the household. The effect is a change in the general workforce and culture of the villages with women becoming the heads of households. The long-term consequences have not been well studied; however this situation is a change to the traditional Mexican way of life.

Additional Types of Migration

Intercontinental Migration

Intercontinental migration is the movement of people across an ocean or continent, such as the movement of the Hmong people from Laos and Thailand to the United States. This type of migration usually involves a large sum of money, including the cost of the trip as well as establishing oneself in the new location.

Intercontinental migration usually involves some type of **distance decay** of the former culture. People begin to assimilate into the culture in which they are presently living. Although they may still hold onto their native language or religion, the influence of their native culture isn't as strong as it was in their original country. This transfer of cultures is called **acculturation**. It usually takes three generations for a culture to lose its native ways. The first generation that comes over speaks very little or none of the new country's language. Their children, however, are educated in the new country's educational system and speak two languages. The native tongue is still spoken in the home, but when the children leave for school, they are immersed in the new country's language. The third generation primarily speaks the new country's language and usually knows very little of the primary language. Most German settlers in the United States were assimilated into U.S. culture through this three-step process. The same process continues today with the Hmong migration.

Churches in the United States first began adopting Hmong families in the 1970s. These churches would welcome a family into the United States and provide them with their basic needs until they could provide for themselves. Once the families had established themselves in the United States, they sent money back home to Laos and Thailand so that other family members could come to the United States. Eventually, cultural mini-centers developed in cities such as Sacramento, California, and Saint Paul, Minnesota. This is an example of a **chain migration**. This type of migration is usually voluntary in nature and functions to reunite families and cultures. It can take many years to bring over a large number of people through chain migration. The first immigrants must establish themselves financially and earn enough money to send back to other family members.

Much of the United States was built on chain migration. Different ethnic groups around the United States, in large and small cities alike, have seen the results of chain migration. Immigrants from countries like Italy and China developed distinctive communities in New York City; Little Italy and Chinatown have become famous among New York City's ethnic neighborhoods. Italians entered the United States at ports in Boston or New York and established themselves in these cultural neighborhoods. Irish settled in Boston, Koreans in Los Angeles. It was easier for immigrants to adjust to the United States in areas where people already spoke their language and practiced their religion. Chain migrations continue today all over the world.

Interregional Migration

Another type of migration is interregional migration. **Interregional migration** is just what it sounds like. This type of migration is usually done within a country's borders, from region to region. The snowbirds that migrate from the northeast to the Sun Belt are interregional migrants. This type of migration is usually voluntary as well. Interregional migration should not be confused with **international migration**, which is movement between countries.

Intraregional Migration

Intraregional migration is the movement of people within the same region. The most typical example of this form of migration is the move from **rural to urban** areas. This migration is usually done for economic reasons. People move off the farm and into cities in the hope of finding jobs. Rural-to-urban migration usually takes place in less developed countries, where the fastest rate of urbanization is taking place.

Rural-to-urban migration occurred at a great rate in the United States during the second half of the 20th century and still continues today. Farmers who could not make enough to pay their bills were forced to look for employment in urban areas. People were leaving farms in the Midwest and Great Plains in large numbers. According to 2000 Census data, only 2 percent of the population in the United States classifies itself as farmers.

However, there has been an urban-to-rural movement recently within sections of more developed countries due to the high living costs in cities. People are moving away from urban areas into the suburbs and exurbs to avoid the high costs and property taxes associated with the urban lifestyle.

Cyclic Migration

People also move seasonally, usually for agricultural reasons. Societies that practice pastoral nomadism use **cyclic movement**, the seasonal migration of livestock to areas where food is more available. **Transhumance** is the movement of livestock to higher elevations during the summer to escape the heat in the valleys and to lower elevations during the winter to escape the severe cold of the mountains.

Cyclical movement ties in closely with the Demographic Transition Model. As a country moves from an agricultural to an industrial base, urbanization spreads, and reliance on agricultural practices such as transhumance decreases.

Intervening Obstacles

Some **intervening obstacles** can adversely affect trade and migration between areas. An intervening obstacle forces individuals to halt and abort their migration plans due to some negative factor, which can range from cultural to physical.

Physical Obstacles

The first of these factors that limit migration is the **physical environment**. Events such as natural disasters and storms have caused people to alter where they were going. For example, imagine traveling on the Great Plains for the first time. You came from Europe, a place that has thunderstorms but none as severe as the storms that occur on the Great Plains. In addition,

tornadoes are heard of in Europe but are not nearly as common as in the Great Plains region. You're in your covered wagon, when ice pellets the size of baseballs begins to pelt your wagon and team of horses or oxen. Even if you survive that, tornadoes spawned by the storm may wipe away everything else. These storms scared off many of the settlers coming to the Great Plains. They left and instead went towards the relatively safe urban areas on the East Coast.

Distance and Cost of Travel

Another factor that greatly influences migration success is the **distance of travel** and **costs** associated with it. The most expensive trips today are the ones that cross an ocean, and the same was true during the peak migration period in U.S. history. Despite being a wonderful opportunity to achieve success, the transatlantic journey came at a considerable financial expense.

Cultural Factors

Other factors that can hinder migration are cultural factors, such as **language**. During migration to the United States, Eastern Europeans first traveled to the port cities in Western Europe and encountered many scams. They were often talked into paying for their journey by a person who barely spoke their own language, and after doing so, were taken for a ride and dropped off at a foreign port with promises that they were in the United States. This scam made thousands of dollars illegally and cost many immigrants their opportunity to reach the United States.

Governmental Restrictions

Not every person who wants to come into a country is allowed access. Many countries around the world have **quotas**. Quotas are limits that governments put on the number of immigrants they allow into their countries. The quota for legal immigrants into the United States is approximately 2 million people per year.

One of the best examples of restriction against entering the United States occurs in southern Florida, particularly Miami. Immigrants from Haiti, the Dominican Republic, and Cuba try to gain entrance, often risking their lives for the opportunity to set foot in the United States.

During the 1980s, Fidel Castro opened up the prisons in Cuba and tried to send the prisoners to the United States. Coast Guard and Immigration and Naturalization Service (INS) officials took them into custody and sent them back to Cuba. (Note that today, the INS is called the U.S. Citizenship and Immigration Services and is a part of the Department of Homeland Security.)

The debate over immigration continues today. The issue of illegal immigration into the United States, particularly across the border with Mexico, has sparked serious debate. A significant number of immigrants, both legal and illegal, come from Mexico. Mexico's struggling economy is a push

factor. Citizens from throughout Central America and even South America try to come into the United States, often illegally and with the help of a coyote. A **coyote** is the term used for a person who is hired to help illegal immigrants get into the United States, often at a cost that does not depend upon success of entry.

In the age of terrorism, many consider the porous border of the United States to be a critically important issue. Some feel that **amnesty** is the best way to deal with the millions of illegal immigrants who are in the United States already. Proponents of amnesty suggest that these illegal immigrants are working jobs that Americans simply will not take, typically in the agricultural industry and under less-than-ideal working conditions. These illegal immigrants often send their earnings to their families back in their home country. Opponents of amnesty suggest that these people have broken the law and need to be returned to their country of origin.

Intervening Opportunities

An **intervening opportunity** is the opposite of an intervening obstacle. An intervening opportunity occurs when a migrant stops and decides to stay at a location along his or her journey because he or she encounters favorable economic opportunities or environmental amenities along the way.

An example of an intervening opportunity would be in the case of a person who is moving from Boston and wants to end up in Miami. Along the journey, he sees the coast of North Carolina and enjoys the area so much that he decides to purchase a home there. Although the opportunities available in Florida are good, this person underestimated his enjoyment of the area around North Carolina. Economic opportunities are also available in North Carolina; thus, he decides to make the stay permanent.

Forced Migration

Slavery

Not all migration is positive. Aside from the negative push factors previously discussed, forced migration has had a dramatic impact on the Western Hemisphere. In the 17th, 18th, and 19th centuries, slaves from West Africa were brought not only to North America, but also to dozens of other countries in the Western Hemisphere to provide labor on many of the plantations in the Caribbean. Sugar, rice, tobacco, and other crops are very labor intensive and need a lot of workers to meet international demand.

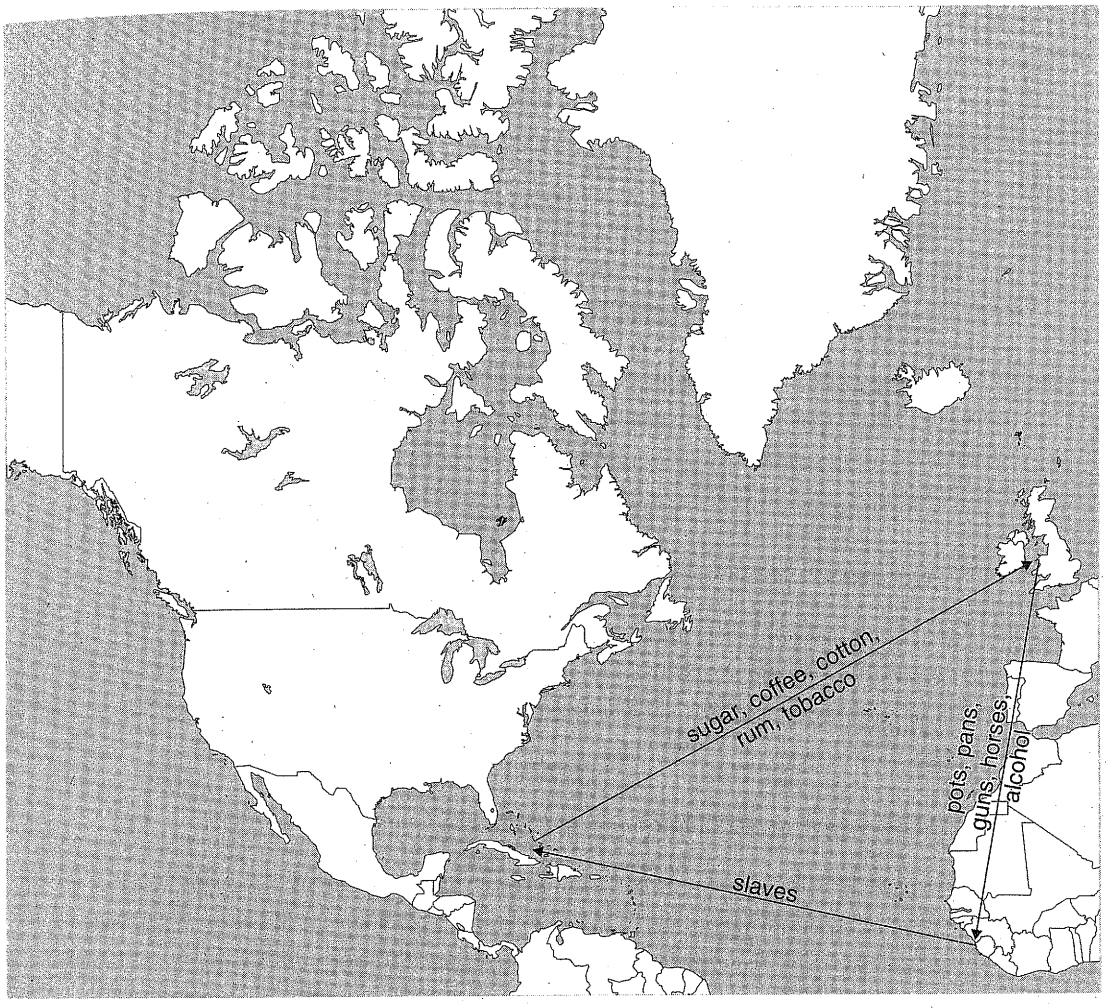

Figure 4.9: Western Hemisphere Slave Trade Map.

Brazil's agriculture emphasized labor-intensive crops, and Brazil imported more slaves than the United States. The impact of the slave trade, shown in Figure 4.9, on the demographics and ethnicity of the Caribbean and other countries in the Western Hemisphere cannot be underestimated. Millions of people of African descent are in the United States, the Caribbean, and South America today as a result of slavery.

TRANSMIGRATION

Transmigration is the removal of people from one place and their relocation somewhere else within a country. This is not always done voluntarily. Indonesia is the fourth most-populated country in the world. A large percentage of the people live on the island of Java. To ease the resource strain on Java, the government of Indonesia put some of its population on other islands.

Opponents of the transmigration argued that the government put minority groups in the fringes of the country to quell separatist movements.

U.S. Immigration: A Case Study

A case study of immigration throughout U.S. history shows distinct patterns. Historically, the two major entry points into the United States were the port of Boston and Ellis Island, which has been turned into a national park in New York Harbor. The primary movement of Americans has been west. However, in the past 50 years, the center of the U.S. population has shifted significantly.

A **census**, which is a detailed counting of the population, has occurred in the United States every ten years since 1790. Census results from 2000 show that the center of population in the United States shifted from Maryland in 1790 to southern Missouri in 2000. This shift is a direct result of the country's international and interregional migration trends.

First Era of U.S. Immigration: 1607 to Early 19th Century

During the early history of the United States, the primary reasons for coming to this country were religious and economic freedom. After the United States gained independence from Great Britain, more and more immigrants came here. Slaves from Africa were imported predominantly to the Southern states.

Second Era of U.S. Immigration: 1820s to 1880s

In the late 1800s, more immigrants came from Europe, and many immigrants, specifically Chinese, arrived on the West Coast of the United States. They took jobs completing the first transcontinental railroad, working in the difficult, mountainous terrain of the western United States. The railroad eventually united the U.S. coasts for the first time (linking in Promontory Summit, Utah, in 1869).

Third Era of U.S. Immigration: End of the 19th Century to the Beginning of the 20th Century

Immigration into the United States saw one of its two peaks during 1900 to 1920. These immigrants came primarily from southern Europe, including Italy, Spain, and Greece, which saw millions of their residents emigrate to the United States.

A major migration within the United States, which often goes unmentioned, is the migration of African Americans from the South to major urban centers in the North during the 1900s. Tens of thousands of African Americans moved into northern cities, such as Chicago and Cleveland. They also moved to the northeast for employment opportunities in industrial centers.

During the 1930s, immigration declined dramatically, going from almost 1 million people per year to less than 50,000. During World War II, immigration into the United States almost ceased. However, some Jews escaped Europe and came to the United States.

Fourth Era of U.S. Immigration: 1950s to Present

Since the 1950s, immigration into the United States has continued to rise. Whereas during the 1800s, the majority of immigrants came from countries, such as Denmark, Sweden, and Norway, in northern Europe, now immigrants come primarily from Latin America and, increasingly, from Asia.

Immigration rises during periods of economic prosperity in the destination country. Today, immigration rates in the United States exceed the top rates of the 1920s. The second peak in immigration occurred at the end of the last century. The greatest number of international immigrants into the United States came from 1980 to 2000.

Future trends in immigration will depend heavily upon the policies of the U.S. government. Meanwhile, the issue of illegal immigration continues to be debated and becomes an issue during every major national election.