

Geomorphology is more closely aligned to physical geography. Human geography, on the other hand, is aligned with a variety of human-centered fields of study, including political science, anthropology, sociology, history, economics, cultural ecology, psychology, linguistics, religious studies, gender studies, urban planning, and demography.

39. (E) *Accessibility* and *connectivity* are two interrelated ways to describe spatial interactions between two or more objects distributed throughout space. *Accessibility* refers to the relative distance separating things in space, as well as the relative costs or difficulties inherent to accessing something in space. *Connectivity* refers to the quality of relations between two or more objects in space.

40. (C) Relative to lines of latitude near the equator, lines of latitude near the poles are shorter. This is the case because the overall circumference of the earth is smaller near the poles than at its center, near the equator.

41. (A) A network is a spatial domain of nodes, or places, that are integrated into a unified and functional system by a common set of linkages, routes, or connections.

(B) A network describes orderly flows of information, goods, or people that circulate between the various nodes in the system's domain. In this way it describes regular patterns of *mobility* between a set of determinate places. These patterns of movement describe how flows of information, goods, or people *diffuse* from place to place along preexisting routes or linkages that direct these flows in orderly and predictable directions. Also, because a network is defined as a functional system of nodes and linkages, or places and routes, it implies that each of these parts are *interdependent* on one another to keep flows of information, goods, or people circulating within the network. If one node or linkage breaks down, the entire flow of the network is also likely to become disrupted. Similarly, the network concept implies a system of relations between different places, so each is spatially *situated* in a unique position relative to the others. For instance, a place or node located closer to the middle of the network could be said to be more centrally located than a place or node located on the periphery.

(C) Networks are particularly relevant tools for describing spatial interactions in a globalized era because they are capable of representing complex, functional interrelationships and interdependencies among a growing number of places scattered across the globe. For instance, whereas all the parts for an automobile might have been manufactured in one factory 50 years ago, today the various parts of an automobile might be manufactured in dozens of different factories around the world. Given this complexity, a network diagram would be capable of demonstrating how an automobile's chain of production flows through many different factories in a globalized system of automobile manufacturing. Similarly, during a globalized era in which personal and professional social ties are becoming more distanced and less place-based, virtual social networks provide an effective approach for understanding the spatial complexities of any particular individual's social linkages.

42. Many geographers theorize that a sense of placelessness is becoming a common way that people relate to their surroundings in modern, highly developed societies. While this theory is difficult to verify, there are many rationales to support it. First, with the rise of *industrialization*, it has become possible for attributes of place to become mass-produced in

developed societies. For example, before industrialization in the United States, homes were individually crafted and built by hand so that no two were exactly alike. However, following industrialization, residential building components began to be mass-produced, resulting in the homogenization of home designs in the United States. This homogenization could support the idea of placelessness because it results in the dwindling uniqueness of certain features of places, like homes. Second, with the growth of mass communications, *popular cultures*, which exist across national and international scales, can be seen to be replacing *vernacular* or *folk cultures*, which previously existed across local and regional scales. As a result, the distinctiveness of different places has diminished as cultural tastes and preferences have become more popularized and mainstream. For instance, because of the widespread diffusion of mass communications such as the television, evidence suggests that local and regional dialects are becoming less common and standard dialects more common. This example could support the idea of placelessness because it suggests that one could travel to different regions of a developed society, such as the United States, and not get a sense of the distinctions that previously gave different places and regions a unique sense of identity. Third, with processes of *globalization*, places spread out across the globe generally are becoming more interdependent and interrelated socioeconomically. As a result of globalization, it is now possible to travel to different world cities and find the same transnational corporate enterprises such as restaurants, retail stores, banks, and hotels. This contributes to a sense of placelessness because one can conceivably be in Tokyo or New York and frequent the same corporate establishments, which, from the inside, are virtually indistinguishable. Finally, with an increase in *mobility* in highly developed societies, people are less rooted to particular places than in the past. For instance, whereas 100 years ago the average person spent his or her entire life in one place, nowadays it is not uncommon for the average person to relocate several times throughout his or her lifetime. This general increase in mobility has arguably weakened the strong attachments to home and an attendant sense of place. In general, these four developments of industrialization, widespread popular cultures, globalization, and an increase in mobility may all be used to support the theory that a sense of placelessness is becoming a more common way that people relate to their surroundings in highly developed, modern societies.

Chapter 2: Population

43. (C) Nigeria is a country experiencing rapid population growth and has a high percentage of young people approaching or at child-bearing age. The population pyramid with a wide base reflects the high percentage of young people. Japan, Germany, and Russia are all experiencing zero population growth, which would result in a narrow base on the population pyramid. The United States is experiencing slow population growth resulting in a slightly larger base that remains relatively constant throughout the ages until slightly decreasing at the top of the pyramid.

44. (C) According to the four stages of the demographic transition model, as countries industrialize, birth and death rates decrease over time due to increased access to health care, education (particularly among women), and other social changes.

45. (D) The first stage of the demographic transition model indicates that total population is low and constant due to high birth and death rates. This is common in preindustrial

societies where women have many children that help support the household. Population does not increase since death rates remain high due to lack of medical care.

46. (B) Stage four of the demographic transition model experiences low birth rates since women are being educated and economies are not dependent on child labor. Subsistence agriculture requires children to work family farms and therefore would actually encourage high birth rates. Increased sanitation and availability of health care would have greater impacts on death rates than birth rates.

47. (D) Moral restraint is the only example of a preventive check. Disease, war, famine, and disasters are examples of positive checks. In general, preventive checks result in lower birth rates, while positive checks result in higher death rates.

48. (A) Malthus believed that only the upper class could enforce moral restraint to limit family size. Additionally, he argued that wealthy families should limit their family size to prevent dividing up their wealth among many heirs. Malthus felt that money should not be taken away from the moral upper class to help the unmoral lower class. He discouraged programs that would help the lower class and actually encouraged poor health habits and poor living conditions among the lower class to reduce the population.

49. (D) India contains three megacities: New Delhi, Mumbai, and Kolkata. A megacity has a population greater than 15 million. The other countries each contain one megacity: São Paulo, Brazil; New York City, United States; Shanghai, China; and Mexico City, Mexico.

50. (C) Optimum population theory suggests that there is an optimal size for a population based on resource availability and carrying capacity. China instituted its one-child policy to limit population growth to reach an optimal level. The other choices are not real theories.

51. (B) A low unemployment rate is not a result of overpopulation, while insufficient housing, overcrowding, deforestation, and lack of resources are all consequences.

52. (A) Sub-Saharan Africa has the largest rate of natural increase (RNI) due to high birth rates. The RNI is the crude birth rate minus the crude death rate. North America, Australia, Russian Domain, and Europe all have neutral or negative RNI rates due to low birth rates.

53. (E) Arithmetic population density is a measure of population per unit area and therefore equals the total population divided by the total land area.

54. (A) Loss of tax base and increased poverty are two examples of problems city centers faced following suburbanization in the 1960s. Only in the past decade have city centers attempted to renovate to try to attract people back downtown. Gentrification is the process of turning lower-income neighborhoods into more expensive areas for the upper class. As people moved to the suburbs, many businesses and jobs also relocated out of the city center. The increased popularity of personal cars helped spur suburbanization as the need for public transportation decreased.

55. (D) Commercial farming and the increased use of machinery to replace human labor resulted in rural population decline in the United States and Canada in the 1900s. Urban decentralization is the migration of people from city centers to the suburbs. The growth the Sunbelt began in the 1970s as a result of an expanding Southern economy and the low cost of living. The warm weather and availability of air-conditioning were also attractive to Northerners. Counterurbanization is a trend in which people migrate from large cities to small towns for the lower cost of living and job opportunities. The "black exodus" from the South refers to African American populations that migrated from the southern United States to the North and West during the early 20th century because of job availability.

56. (B) Urban primacy is when a country has a primary city that is three or four times larger than any other city in the country. It is common in Latin America and can be a problem since so many natural resources are concentrated in one urban area.

57. (D) Developed countries such as the United States, Australia, and France have a low rate of natural increase than undeveloped countries such as Honduras, Bangladesh, and Chad. Rate of natural increase is the crude birth rate minus the crude death rate of a population. Undeveloped countries have higher crude birth rates, crude death rates, and fertility rates than developed countries.

58. (A) During the 1990s, the United States experienced high levels of immigration (people moving to the United States), which contributed to slow population increase. The birth fertility, and death rates did not change substantially during this decade. Emigration, when people leave their home country to move elsewhere, was also low during this decade.

59. (D) A limiting factor is something that limits population growth. Food, water, and living space are all examples of limiting factors. Without access to these resources, population cannot grow and eventually decline. The other choices are not real factors.

60. (B) Carrying capacity is the maximum population size that an environment can support. In general, populations increase when they are below the carrying capacity because there are plenty of resources available for the entire population. However, population decrease when they are above carrying capacity because resources are not available for everyone.

61. (C) Measuring the doubling time of a population requires that the growth rate be constant over long periods of time.

62. (D) In the United States women had fewer children in 1995 than in 1955, which was the baby boom era. Also, women are having children later in life; there is a clear shift from women having children in their early twenties in 1955 to women having children in the early thirties in 1995.

63. (A) A push factor is any circumstance or event that would make someone want to leave his or her home country and migrate elsewhere. Examples include war, famine, disaster, and lack of jobs. Pull factors are the reasons immigrants want to settle in a new country, such as religious freedom or job opportunity.

64. (C) A baby boom is a sharp population increase that reflects a period of peace and prosperity. In general, fertility rates decrease when women seek higher levels of education and competitive jobs. Following World War II, the United States experienced a baby boom between 1946 and 1964.

65. (B) Demographic data describes the characteristics of a population. For example, the U.S. Census collects demographic data such as age, gender, race, and income.

66. (D) The dependency ratio is the number of people between 14 and 64 years of age (working age) compared to the number of people aged 65 or older (retirement age) and under 14 years old (children) in a population. A high dependency ratio suggests that many people in the population are classified as dependent, under the age of 14 and over the age of 65.

67. (E) Since women have longer life expectancies than men, the majority of older persons in developed countries are women. Since women tend to outlive men, they are often single in older age while men tend to remarry. In developed countries, the older populations are growing at significantly faster rates than the younger population as a result of low birth and death rates. In 2000 and 2004 elections the 60–70 age group had higher voter turnout rates than any other age group.

68. (A) Zimbabwe has the lowest life expectancy at birth, 49.64 years for the total population. Japan, Chile, Switzerland, and Canada all have life expectancies at birth of 75 years or more.

69. (D) *Remittance* is the term for when a migrant sends money back to family still living in his or her home country. It is considered a form of international aid.

70. (B) A cohort is a group of people that share characteristics or experiences. In population geography, a cohort is any group of individuals that is from the same generation.

71. (D) The diffusion of fertility control is the spread and use of birth control in an area. In the Middle East the diffusion of fertility control is greater than 4 (high), while in North America, the Russian Domain, and Europe it is below 2.1 (low). In South America it is between 2 and 3 (moderate).

72. (E) Demographic momentum describes a population that, because of the high percentage of people of child-bearing age, continues to grow after fertility rates decline.

73. (D) A contagious disease, such as influenza, is passed through a population from contact with an infected person. In hierarchical diffusion, the disease spreads from high-density urban areas to rural areas. Network diffusion occurs along transportation and/or social networks, and relocation diffusion occurs when the disease migrates to new regions. Mixed diffusion is a combination of the other types of diffusion.

74. (B) *Ecumene* is the proportion of land that is occupied by permanent human settlement (the built environment) compared to the amount of undeveloped land.

75. (A) Neo-Malthusians incorporate the rapid growth of developing countries into the overpopulation theory as well as examine the lack of other resources such as sanitation and medicine for the survival of people. Malthus mainly focused on the availability of food as the limiting factor of population growth. Neither neo-Malthusians nor Malthusians believe that technological advances can help sustain a population by producing required resources.

76. (E) Cyclic movement is a type of migration that has a clear cycle, such as a nomad tribe that moves to specific locations each season based on food availability.

*77. (C) The gravity model uses the size and distance of two cities to determine how people and services will move between them. Larger cities that are closer together will have a high exchange rate of people, ideas, and goods than smaller cities that are farther apart.

78. (D) Transhumance is defined as the seasonal movement of livestock between pastured areas in the lowlands and mountains. Step migration is a series of small moves from relatively similar places to more different areas; for example, moving from a rural area to a small town to a city. Transmigration is a mass move of people from one place to another, such as to alleviate overcrowding. Periodic movement is a type of relocation that is temporary, such as military service or college. Finally, interregional migration is a permanent movement from one area of a country to another.

79. (A) Chain migration is when one family member migrates to a new country where she or he earns money to help the rest of the family move to that country at a later date. It is very common among families migrating from Mexico to the United States.

80. (B) In the United States, fertility rates are highest among low-income groups. Fertility rates are also higher in rural areas when compared to metropolitan areas and among women with high school degrees when compared to college graduates. The United States has also experienced a trend of women having children later in life. Finally, certain ethnicities such as Hispanics and African Americans tend to have higher fertility rates than other groups such as whites.

81. (C) Undeveloped countries have tried to make land that is already farmed more productive by increasing irrigation, chemical fertilizers, and pesticides. Often new farmland is unavailable, so farmers must find ways to increase productivity of already established farmland. The use of genetically modified crops through the Green Revolution has increased in the developing countries, resulting in higher crop yields.

82. (C) The Middle East and North Africa have the lowest per capita freshwater resources (760 cubic meters), while Latin America and Asia enjoy the largest freshwater resources (10,000 or more cubic meters).

83. (E) China has only 0.111 hectares per person of arable land. Kazakhstan (1.513 hectares), Canada (1.444 hectares), Australia (2.395 hectares), and Argentina (0.734 hectares) enjoy greater availability of farmland. In general the temperate and continental climates have more arable land; Europe and Central Asia have the highest amount of arable land available per capita.

84. (B) Gerrymandering is used to manipulate voting districts to impact future elections. Areas that have a stable voting pattern over time are most susceptible to gerrymandering. Packing is a strategy used in gerrymandering where the opposition party is packed into one district to increase the party's power in the other districts. Reapportionment is when the size of state congressional delegations are redefined due to new census information. *Riding* is the Canadian term for an electoral district. *Repositioning* is not a term used in political geography.

85. (C) Spatial patterns of populations are described as either uniform, random, or clustered. The Homestead Act of 1862 allocated rectangular parcels of land comprising 160 acres each. This resulted in a uniform pattern of rural population distribution that is evident today.

86. (E) Environmental resistance is the difference between the actual growth of a population and its potential growth that is limited by factors including competition, food availability, climate, and predators.

87. (D) Fecundity is the maximum potential of a population to reproduce. Sterility is the inability to produce children. The terms *fruitful*, *prolific*, and *fertility* refer to the ability to produce children.

88. (B) A dispersed population distribution is when a population is evenly distributed across an area. This is especially common in rural farming areas. The opposite is concentrated distribution, in which people are densely grouped in an urban area.

89. (A) The gross national product (GNP) is the amount of goods and services produced by a country in one year divided by the number of people living in the country.

90. (A) A guest worker is someone who leaves his or her country to work in another country without the intent to settle permanently. Typically, the labor is physical, and young people are best suited for the work.

91. (C) The rule of 70 is an approximation of the doubling time for a population. For any population growing at a constant rate, divide 70 by the annual growth rate to determine the approximate amount of time it will take for the population to double.

92. (B) A choropleth map uses different colors to represent varying quantities in defined areas, such as states or countries. The quantities can represent percentages, densities, or rates. A cartogram is a map with distorted area and shape to emphasize a thematic variable, such as the GNP or HIV-infection rates. A flow line map uses arrows to indicate the flow or transfer of goods, services, or people. A dot map uses dots to represent a distribution of goods, people, or services. An isoline map uses isolines to connect areas with the same values and is common in representing not only population but also climate and agriculture.

93. (F) Malaria is endemic to tropical or subtropical regions. An endemic disease is continuously present within the population of a region. An epidemic is a disease, like the plague, that affects many people for a period of time then subsides. A pandemic is a wide-

spread epidemic that could affect large areas such as continents or even the entire world. prosodemic is a disease that is transferred directly from one person to another. Endoderm refers to a layer of cells in an embryo.

94. (D) Standard of living indicates the wealth and material goods available to each person in a country. Developed countries enjoy higher standards of living than developing countries; therefore, standard of living can indicate the level of development of a country.

95. (A) A J-curve suggests that population projections indicate exponential growth. If population line mimics the shape of the letter J, where population growth is initially slow then increases dramatically.

96. (C) Most developed countries (MDC) have lower illiteracy rates than least developed countries (LDC). Illiteracy is defined as not being able to read or write. LDC are categorized by the United Nations based on socioeconomic development such as gross national income, health, education, nutrition, and economic vulnerability.

97. (B) An intervening opportunity is an environmental or cultural factor that encourages migration.

98. (E) Core countries are developed, produce new innovations, and serve as a central place for trade. The United States is an example of a core country.

99. (A) A periphery country is generally undeveloped and a poorer nation. Periphery countries are not central in the trade of goods and services or development of new innovations

100. (D) According to Ravenstein's migration laws, most international migrants are young males, while women are more likely to migrate within their own country.

101. (B) In 1997, more people migrated from Pakistan to the UK. The movement between two places usually occurs in both directions, but unequally. The place with the majority of the migration is called the dominant migration, while the place with the fewer migrants is termed the reverse migration or counter migration.

102. (C) A forced migration is the result of religious or political persecution, war, natural disasters, forced labor, or famine. The California gold rush was not a forced migration, as people moved to the American West looking for gold and new opportunity.

103. (E) Differential migration is the idea that some people are more likely to migrate than others based on factors such as age, education, gender, and occupation. Young males tend to be the most migratory.

104. (B) Emigration, the process of leaving one's home country to settle in another place, can reduce the pressure on land in overpopulated areas.

105. (A) Harvesting plants twice a year is known as double cropping. It can result in poor soil quality and can lead to migration.

106. (C) A type of rural settlement with several families living close together and surrounded by farms is known as nucleated.
107. (D) A refugee is a person who is forced to leave his or her homeland because of persecution, war, or other violence. Following WWII many refugees left Eastern Europe because of persecution and violence.
108. (B) A consequence of zero population growth is reduced strain on resources, including land, food, and water.
109. (C) While India continues to experience population growth, the rising death rates have decreased projected population numbers. The rising death rates in India are primarily a result of decreasing cropland, the HIV epidemic, and the depletion of aquifers. The higher maternal mortalities (death during childbirth) also contribute to a high death rate.
110. (D) While all of the other choices either reduce the fecundity (fertility) rates of the female population of a developed country or reduce the number of children per household, choice (D), immigration rate, is not factored into the calculation for RNI.
111. (C) Because TFR is simply the number of live births divided by the number of women of birthing age, and because neither of these numbers can be below zero for any population, TFR cannot be negative.
112. (E) Countries with high birth and death rates but very low life expectancies fit into stage one of the demographic transition model and would be likely to experience negative RNI. War-torn countries like Sierra Leone and countries like Botswana, which experience a high rate of HIV infection, both fit into this category.
113. (B) Neo-Malthusians, who subscribe to some of the population theories advanced in the 19th century by Thomas Malthus, believe that resource consumption and increasing demand will present significant issues for the global community as world population increases in the coming decades.
114. (D) Brownsville, in southern Texas, is very close to the Mexican border. As such, the population graph for Brownsville very closely resembles that of Mexico. None of the other factors mentioned would result in a triangle-shaped graph.
115. (A) Voluntary movement to a series of more and more economically advantageous locations is a type of step migration.
116. (B) The high cost of land is considered a push factor. All of the other choices are factors that might entice people to immigrate to another country.
117. (C) The population center of the United States has moved westward in every census since 1790, and in recent years it has moved slightly southward as well, so that it is now located in the south central part of Missouri.

118. (E) Countries like Uzbekistan and Iraq have high physiologic densities but not high arithmetic densities.
119. (B) As populations of developed countries age, the prevalence of chronic diseases increased, placing an increased burden on the health-care systems of those countries.
120. (D) According to Thomas Malthus, populations of poor people could not be controlled exclusively by preventive checks. Malthus advocated cutting off charitable aid to poor and increasing the likelihood that positive checks such as disease would take over and control the surplus population of poor people. In the Malthusian model, a large surplus population of poor people was a hindrance to economic activity and social development not an integral part of it.
121. (A) The epidemiological transition model suggests that the cause of death change in a society from communicative diseases to degenerative diseases over time. The model is divided into three stages. The first stage experiences high and fluctuating mortality rates due to epidemic diseases and famine. Life expectancy at birth is low during this stage, approximately 30 years. The second stage experiences less frequent pandemics, and a result mortality rates decline. Life expectancy during the second stage increases to around 50 years. Additionally, population growth begins to increase exponentially. The third stage is when mortality is mostly caused by degenerative and man-made diseases, such as high blood pressure, lung cancer, and cardiovascular disease. In this stage, mortality rates continue to decline until reaching low stable levels. Average life expectancy increases to 70 years or more. At this stage, fertility and birth rates are the major factor in population growth, which is stable and either slowly increasing or even decreasing.
- (B) Longer life expectancies at birth can be attributed to many factors, including better access to health care, improved nutrition, and increased sanitation. Decreased exposure to environmental pollution can also contribute to longer life expectancies.
122. Stouffer's law of intervening opportunities suggests that migration to a new location is directly proportional to the opportunities at the destination. Therefore, the place of departure has fewer opportunities than the destination. Intervening opportunities are factors that persuade a migrant to settle en route instead of continuing to the original destination. Intervening opportunities offer opportunities complementary to the ones originally sought at the planned destination, such as jobs, land, education, and political or religious freedom. Additionally, intervening obstacles could result in settlement en route because of language barriers, international boundaries, or anxieties about the planned destination.
- Push and pull factors can be physical, demographic, economic, social, or political. Pull factors are reasons to leave a homeland and migrate elsewhere. Some examples of pull factors include natural disasters, famine, lack of work, overcrowding, war, and political instability. Pull factors are reasons to migrate to a new location; examples include labor demand, higher wages, religious freedom, better living conditions, education opportunities, and political stability. Pull factors are not always real and can be imaginary reasons, such as the rumors that American streets were paved with gold to entice new immigrants from Europe during the 19th century.