

CHAPTER 2

ETHICS AND METHODS

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In Chapter 1, we learned about anthropology and its subfields. Chapter 2 begins with a consideration of the ethical dimensions of anthropology, then turns to a discussion of research methods in physical anthropology, archaeology, and cultural anthropology. (Linguistic methods are discussed in Chapter 10.)

As the main organization representing the breadth of anthropology (all four subfields, academic and applied dimensions), the American Anthropological Association (AAA) believes that generating and appropriately using knowledge of the peoples of the world, past and present, is a worthy goal. The mission of the AAA is to advance anthropological research and encourage the spread of anthropological knowledge through publications, teaching, public education, and application. Part of that mission is to help educate AAA members about ethical obligations and challenges (<http://www.aaanet.org>).

→ ETHICS AND ANTHROPOLOGY

Anthropologists are increasingly mindful of the fact that science exists in society, and in the context of law and ethics. Anthropologists can't study things simply because they happen to be interesting or of value to science. As anthropologists conduct research and engage in other professional activities, ethical issues inevitably arise. Anthropologists typically have worked abroad, outside their own society. In the context of international contacts and cultural diversity, different value systems will meet, and often compete. To guide its members in making decisions involving ethics and values, the AAA offers a Code of Ethics.

The most recent code was approved in 1998 and updated in 1999. The code's preamble states that anthropologists have obligations to their scholarly field, to the wider society and culture, and to the human species, other species, and the environment. This code's aim is to offer guidelines and to promote discussion and education rather than to investigate allegations of misconduct. The AAA code addresses several contexts in which anthropologists work. Its main points may be summarized.

Anthropologists should be open and honest about their research projects with all parties affected by the research. These parties should be informed about the nature, procedures, purpose(s), potential impacts, and source(s) of support for the research. Researchers should not compromise anthropological ethics in order to conduct research. They should pay attention to proper relations between themselves as guests and the host nations and communities where they work. The AAA does not advise anthropologists to avoid taking stands on issues. Indeed, seeking to shape actions and policies may be as ethically justifiable as inaction.

The full Code of Ethics is available at the AAA website (<http://www.aaanet.org>).

Physical anthropologists and archaeologists, in particular, often work as members of international teams. These teams typically include researchers from several countries, including the *host country*—the place (e.g., Ethiopia) where the research takes place. In **paleoanthropology** (aka *human paleontology*)—the study of human evolution through the fossil record—physical anthropologists and archaeologists often work together. Although the physical anthropologists are more interested in bones and the archaeologists in artifacts, their work may proceed jointly, as they try to infer the relation between the physical and cultural features of the remains they are examining.

Anthropologists must inform officials and colleagues in the host country about the purpose, funding, and likely results, products, and impacts of their research. They need to negotiate the matter of where the materials produced by the research will be analyzed and stored—in the host country or in the anthropologists' country—and for how long. To whom do research materials such as bones, artifacts, and blood samples belong? What kinds of restrictions will apply to their use?

The anthropologist's primary ethical obligation is to the people, species, and materials he or she studies. **Informed consent** (agreement to take part in the research—after having been informed about its nature, procedures, and possible impacts) should be obtained from anyone who provides information or who might be affected by the research. Although nonhuman primates can't give informed consent, primatologists still must take steps to ensure that their research doesn't endanger the animals. Either

government agencies or nongovernmental organizations (NGOs) may be entrusted with protecting primates. If this is the case, the anthropologist will need their permission and informed consent to conduct research.

With living humans, informed consent is a necessity, not only in gathering information, but especially in obtaining biological samples, such as blood or urine. The research subjects must be told how the samples will be collected, used, and identified, and about the potential costs and benefits to them. Informed consent is needed from anyone providing data or information, owning materials being studied, or otherwise having an interest that might be affected by the research.

It is appropriate for North American anthropologists working in another country to (1) include host country colleagues in their research planning and requests for funding, (2) establish truly collaborative relationships with those colleagues and their institutions before, during, and after field work, (3) include host country colleagues in dissemination, including publication, of the research results, and (4) ensure that something is “given back” to host country colleagues. For example, research equipment and technology are allowed to remain in the host country. Or funding is provided for host country colleagues to do research, attend international meetings, or visit foreign institutions—especially those where their international collaborators work.

➔ RESEARCH METHODS IN PHYSICAL ANTHROPOLOGY AND ARCHAEOLOGY

There are all sorts of specialized research interests, topics, and methods within both physical anthropology and archaeology. (Given space limitations only some of them can be covered here.)

Multidisciplinary Approaches

Scientists from diverse fields—for example, soil science and **paleontology** (the study of ancient life through the fossil record)—collaborate with anthropologists in the study of sites where fossils or artifacts have been found. *Palynology*, the study of ancient plants through pollen samples, is used to determine a site’s environment at the time of occupation. Physical anthropologists and archaeologists turn to physicists and chemists for help with dating techniques. Physical anthropologists representing a subspecialty known as *bioarchaeology* may complement the picture of ancient life at a particular site by examining human skeletons to reconstruct their physical traits, health status, and diet (Larsen 2000). Evidence for social status may endure in hard materials—bones, jewels, buildings—through the ages. During life, bone growth and stature are influenced by diet. Genetic differences aside, taller people often are that way because they eat better than shorter people do. Differences in the chemical composition of groups of bones at a site may help distinguish privileged nobles from less fortunate commoners.

Anthropologists work with geologists, geographers, and other scientists in using satellite images to find ancient footpaths, roads, canals, and irrigation systems as well as patterns of flooding and deforestation, which can then be investigated on the ground. Aerial photos (taken from airplanes) and satellite images are forms of *remote sensing*

used in site location. Anthropologists have used satellite imagery to identify, and then investigate on the ground, regions where deforestation is especially severe and where people and biodiversity, including nonhuman primates, may be at risk (Green and Sussman 1990; Kottak 1999; Kottak, Gezon, and Green 1994).

Primateology

Primate behavior has been observed in zoos (e.g., de Waal 1998) and through experimentation (e.g., Harlow 1971), but the most significant studies have been done in natural settings, among free-ranging apes, monkeys, and lemurs. Since the 1950s, when primatologists began their shift from zoos to natural settings, numerous studies have been done of apes (chimps, gorillas, orangutans, and gibbons), monkeys (e.g., baboons, macaques), and lemurs (e.g., Madagascar's indrii, sifaka, and ring-tailed lemurs). *Arboreal* primates (those that spend most of their time in the trees) are difficult to see and follow, but they typically make a lot of noise. Their howls and calls can be studied and teach us about how primates communicate. Studies of primate social systems and behavior, including their mating patterns, infant care, and patterns of contact and dispersal, suggest hypotheses about behavior that humans do or do not share with our nearest relatives—and also with our hominid ancestors.

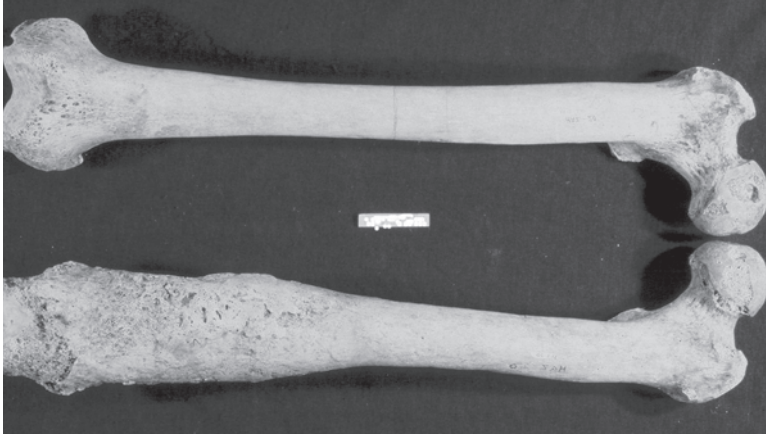
Anthropometry

Physical anthropologists use various techniques to study nutrition, growth, and development. **Anthropometry** is the measurement of human body parts and dimensions, including skeletal parts (*osteometry*). Anthropometry is done on living people as well as on skeletal remains from sites. Body mass and composition provide measures of nutritional status in living people. Body mass is calculated from height and weight. The *body mass index* (kg/m^2) is the ratio of weight in kilograms divided by height in meters squared. An adult body mass above 30 is considered at risk of overweight, while one below 18 is at risk of underweight or malnutrition.

Bone Biology

Central to physical anthropology is **bone biology** (or skeletal biology)—the study of bone as a biological tissue, including its genetics; cell structure; growth, development, and decay; and patterns of movement (*biomechanics*) (Katzenberg and Saunders, eds. 2000). The interpretation of fossil remains relies on understanding the structure and function of the skeleton. **Paleopathology** is the study of disease and injury in skeletons from archaeological sites. Some forms of cancer leave evidence in the bone. Breast cancer, for example, may spread (metastasize) skeletally, leaving holes or lesions in bones and skull. Certain infectious diseases (e.g., syphilis and tuberculosis) also mark bone, as do injuries and nutritional deficiencies (e.g., rickets, a vitamin D deficiency that deforms the bones).

In forensic anthropology, physical anthropologists work in a legal context, assisting coroners, medical examiners, and law enforcement agencies in recovering,



Two adult femora. The top one is normal in size and shape. The bottom one shows swelling and a ragged surface resulting from the chronic bacterial infection called osteomyelitis. These bones are from the Mississippian period Hazel site in Arkansas.

analyzing, and identifying human remains and determining the cause of death (Nafte 2000; Prag and Neave 1997). For example, when unknown skeletal remains are found, the police and the Delaware Medical Examiner's Office call on University of Delaware physical anthropologist Karen Rosenberg to help identify the body. By examining the bones, Rosenberg can determine characteristics, such as the height, age, and sex of the person. She notes that "the police authorities always ask for the race of an unidentified person. But racial categories are, in part, culturally defined and in any case are not closed biological 'types.' Recently I identified a skeleton as possibly being Caucasian, then on subsequent examinations thought he might be African American. In actuality, when the identification was made, he turned out to be Hispanic" (Rosenberg, quoted in Moncure 1998).

Molecular Anthropology

Molecular anthropology uses genetic analysis (of DNA sequences) to assess evolutionary links. Through molecular comparison, evolutionary distance among living species, along with dates of most recent common ancestry, can be estimated. Molecular studies also have been used to assess and date the origins of modern humans and to examine their relation to extinct human groups such as the Neandertals, which lived in Europe between 130,000 and 28,000 years ago.

Molecular anthropologists examine relationships among ancient and contemporary populations and among species. It's well established, for example, that humans and chimpanzees have more than 98 percent of their DNA in common. Molecular anthropologists also reconstruct waves and patterns of migration and settlement. A *haplogroup* is a biological lineage (a large group of related people) defined by a specific cluster of genetic traits that occur together. Native Americans have four major haplogroups, which also are linked to East Asia. For nonhuman primates, molecular anthropologists use

DNA sequences to identify parentage, and to calculate kinship and degree of inbreeding within primate colonies. Molecular anthropologists also use “genetic clocks” to estimate divergence time (date of most recent common ancestry) among species (e.g., humans, chimps, and gorillas—5 million to 8 million years ago) and of various human groups (e.g., Neandertals and modern humans).

Paleoanthropology

Paleoanthropologists study early hominids through fossil remains. **Fossils** are remains (e.g., bones), traces, or impressions (e.g., footprints) of ancient life. Typically, a team composed of scientists, students, and local workers participates in a paleoanthropological study. Such teams may include physical anthropologists, archaeologists, paleontologists, geologists, palynologists, paleoecologists, physicists, and chemists. Paleontologists help locate fossil beds containing remains of animals that can be dated and that are known to have coexisted with hominids at various time periods. Good preservation of faunal remains may suggest that hominid fossils have survived as well. Sometimes it’s impossible to date the hominid fossils and artifacts found at a given site by using the most accurate and direct (radiometric) methods. In this case, comparison of the faunal remains at that site with similar, but more securely dated, fauna at another site may suggest a date for those animal fossils and the hominids and artifacts associated with them (see Gugliotta 2005).

Survey and Excavation

Once potential sites have been identified, more intensive surveying begins in the search for hominid traces—bones or tools. Only hominids work rock to make tools and move rock fragments over long distances (see Watzman 2006). Some early hominid sites are strewn with thousands of tools. Typically, archaeologists, paleoanthropologists, and paleontologists combine both local (excavation) and regional (systematic survey) perspectives. They recognize that sites may not be discrete and isolated, but parts of larger systems.

Systematic Survey

Archaeologists and paleoanthropologists have two basic field work strategies: systematic survey and excavation. **Systematic survey** provides a regional perspective by gathering information on settlement patterns over a large area. *Settlement pattern* refers to the distribution of sites within a region. Regional surveys reconstruct settlement patterns by addressing several questions: Where were sites located? How big were they? What kinds of buildings did they have? How old are the sites? Ideally, a systematic survey involves walking over the entire survey area and recording the location and size of all sites. From artifacts found on the surface, the surveyor estimates when each site was occupied.

Excavation

During an **excavation**, scientists recover remains by digging through the layers of deposits that make up a site. These layers or strata are used to establish the time order of



An archaeologist drives in another stake for a large grid at an excavation site in Teotihuacan, Mexico. Such a grid enables the researchers to record the exact location of any artifact or feature found at the site.

the materials encountered during the dig. This relative chronology is based on the principle of *superposition*: In an undisturbed sequence of strata, the oldest layer is on the bottom. Each successive layer above is younger than the one below. Thus, artifacts and fossils from lower strata are older than those recovered from higher strata in the same deposit. This relative time ordering of material remains lies at the heart of archaeological, paleoanthropological, and paleontological research.

The archaeological and fossil records are so rich, and excavation is so labor-intensive and expensive, that nobody digs a site without a good reason. Sites are excavated because they are endangered, or because they answer specific research questions. Cultural resource management (CRM) focuses on managing the preservation of archaeological sites that are threatened by modern development. Many countries require archaeological impact studies before construction can take place. If a site is at risk and the development cannot be stopped, CRM archaeologists are called in to salvage what information they can from the site. (See the box at the end of this chapter.) Another reason a site may be chosen for excavation is that it is well suited to answer specific research questions. An archaeologist studying the origins of agriculture wouldn't want to excavate a large, fortified hilltop city with a series of buildings dating to a period well after the first appearance of farming communities. Rather, he or she would look for a small hamlet-size site located near good farmland and a water source. Such a site would have evidence of an early occupation dating to the period when farming communities first appeared in that region.

→ KINDS OF ARCHAEOLOGY

Archaeologists pursue diverse research topics, using a wide variety of methods. Experimental archaeologists try to replicate ancient techniques and processes (e.g., tool making) under controlled conditions. Historical archaeologists use written records as guides and supplements to archaeological research. They work with remains more recent—often much more recent—than the advent of writing. Colonial archaeologists, for instance, use historical records as guides to locate and excavate postcontact sites in North and South America, and to verify or question written accounts. Classical archaeologists usually are affiliated with university departments of classics or the history of art, rather than with anthropology departments. These classical scholars focus on the literate civilizations of the Old World, such as Greece, Rome, and Egypt. Classical archaeologists often are as (or more) interested in art—styles of architecture and sculpture—as in the social, political, and economic variables that typically interest the anthropologist. Underwater archaeology is a growing field that investigates submerged sites, most often shipwrecks. Special techniques, including remotely operated vehicles like the one shown in the movie *Titanic*, are used, but divers also do underwater survey and excavation.

→ DATING THE PAST

The archaeological record hasn't revealed every ancient society that has existed on Earth; nor is the fossil record a representative sample of all the plants and animals that ever have lived. Some species and body parts are better represented than others are, for many reasons. Hard parts, such as bones and teeth, preserve better than do soft parts, such as flesh and skin. The chances of fossilization increase when remains are buried in a newly forming sediment, such as silt, gravel, or sand. Good places for bones to be buried include swamps, floodplains, river deltas, lakes, and caves. The species that inhabit such areas have a better chance to be preserved than do animals that live in other habitats. Fossilization also is favored in areas with volcanic ash. Once remains do get buried, chemical conditions must be right for fossilization to occur. If the sediment is too acidic, even bones and teeth will dissolve. The study of the processes that affect the remains of dead animals is called **taphonomy**, from the Greek *taphos*, which means "tomb." Such processes include scattering by carnivores and scavengers, distortion by various forces, and the possible fossilization of the remains.

The conditions under which fossils are found also influence the fossil record. For example, fossils are more likely to be uncovered through erosion in arid areas than in wet areas. Sparse vegetation allows wind to scour the landscape and uncover fossils. The fossil record has been accumulating longer and is more extensive in Europe than in Africa because civil engineering projects and fossil hunting have been going on longer in Europe than in Africa. A world map showing where fossils have been found does not indicate the true range of ancient animals. Such a map tells us more about ancient geological activity, modern erosion, or recent human activity—such as paleontological research or road building. In considering the primate fossil record in later chapters, we'll see that certain areas provide more abundant fossil evidence for particular time periods. This doesn't necessarily mean that primates were not living elsewhere at the same time.

Nor does failure to find a fossil species in a particular place always mean that species did not live there. In the words of paleoanthropologist Christopher Stringer, “absence of evidence does not necessarily prove evidence of absence” (quoted in Gugliotta 2005).

We’ve seen that *paleontology* is the study of ancient life through the fossil record and that *paleoanthropology* is the study of ancient humans and their immediate ancestors. These fields have established a time frame, or *chronology*, for the evolution of life. Scientists use several techniques to date fossils. These methods offer different degrees of precision and are applicable to different periods of the past.

Relative Dating

Chronology is established by assigning dates to geologic layers (strata) and to the material remains, such as fossils and artifacts, within them. Dating may be relative or absolute. **Relative dating** provides a time frame in relation to other strata or materials rather than absolute dates in numbers. Many dating methods are based on the geological study of **stratigraphy**, the science that examines the ways in which earth sediments accumulate in layers known as *strata* (singular, *stratum*). Soil that erodes from a hillside into a valley covers, and is younger than, the soil deposited there previously. Stratigraphy permits relative dating. That is, the fossils in a given stratum are younger than those in the layers below them and older than those in the layers above them. We may not know the exact or absolute dates of the fossils, but we can place them in time relative to remains in other layers. Changing environmental forces, such as lava flows and the alternation of land and sea, cause different materials to be deposited in a given sequence of strata; this allows scientists to distinguish between the strata.

Remains of animals and plants that lived at the same time are found in the same stratum. When fossils are found within a stratigraphic sequence, scientists know their dates relative to fossils in other strata; this is relative dating. When fossils are found in a particular stratum, the associated geological features (such as frost patterning) and remains of particular plants and animals offer clues about the climate at the time of deposition.

Absolute Dating

Fossils can be dated more precisely, with dates in numbers (**absolute dating**), by using several methods. For example, the ^{14}C , or carbon-14, technique is used to date organic remains. This is a *radiometric* technique (so called because it measures radioactive decay). ^{14}C is an unstable radioactive isotope of normal carbon, ^{12}C . Cosmic radiation entering the earth’s atmosphere produces ^{14}C , and plants take in ^{14}C as they absorb carbon dioxide. ^{14}C moves up the food chain as animals eat plants and as predators eat other animals.

With death, the absorption of ^{14}C stops. This unstable isotope starts to break down into nitrogen (^{14}N). It takes 5,730 years for half the ^{14}C to change to nitrogen; this is the half-life of ^{14}C . After another 5,730 years only one-quarter of the original ^{14}C will remain. After yet another 5,730 years only one-eighth will be left. By measuring the proportion of ^{14}C in organic material, scientists can determine a fossil’s date of death, or the date of an ancient campfire. However, because the half-life of ^{14}C is short, this dating technique is less dependable for specimens older than 40,000 years than it is for more recent remains.

Fortunately, other radiometric dating techniques are available for earlier periods. One of the most widely used is the potassium-argon (K/A) technique. ^{40}K is a radioactive isotope of potassium that breaks down into argon-40, a gas. The half-life of ^{40}K is far longer than that of ^{14}C —1.3 *billion* years. With this method, the *older* the specimen, the more reliable the dating. Furthermore, whereas ^{14}C dating can be done only on organic remains, K/A dating can be used only for inorganic substances: rocks and minerals.

^{40}K in rocks gradually breaks down into argon-40. That gas is trapped in the rock until the rock is heated intensely (as with volcanic activity), at which point it may escape. When the rock cools, the breakdown of potassium into argon resumes. Dating is done by reheating the rock and measuring the escaping gas.

In Africa's Great Rift Valley, which runs down eastern Africa and in which early hominid fossils abound, past volcanic activity permits K/A dating. In studies of strata containing fossils, scientists find out how much argon has accumulated in rocks since they were last heated. They then determine, using the standard ^{40}K deterioration rate (half-life), the date of that heating. Considering volcanic rocks at the top of a stratum with fossil remains, scientists establish that the fossils are *older than*, say, 1.8 million years. By dating the volcanic rocks below the fossil remains, they determine that the fossils are *younger than*, say, 2 million years. Thus, the age of the fossils is set at between 2 million and 1.8 million years. Note that absolute dating is that in name only; it may give ranges of numbers rather than exact dates.

Many fossils were discovered before the advent of modern stratigraphy. Often we can no longer determine their original stratigraphic placement. Furthermore, fossils aren't always discovered in volcanic layers. Like ^{14}C dating, the K/A technique applies to a limited period of the fossil record. Because the half-life of ^{40}K is so long, the technique cannot be used with materials less than 500,000 years old.

Other radiometric dating techniques can be used to cross-check K/A dates, again by using minerals surrounding the fossils. One such method, *uranium series dating*, measures fission tracks produced during the decay of radioactive uranium (^{238}U) into lead. Two other radiometric techniques are especially useful for fossils that cannot be dated by ^{14}C (up to 40,000 before the present, or B.P.) or ^{40}K (more than 500,000 B.P.). These methods are *thermoluminescence* (TL) and *electron spin resonance* (ESR). Both TL and ESR measure the electrons that are constantly being trapped in rocks and minerals (Shreeve 1992). Once a date is obtained for a rock found associated with a fossil, that date also can be applied to that fossil. The time spans for which the various absolute dating techniques are applicable are summarized in Table 2-1.

➔ RESEARCH METHODS IN CULTURAL ANTHROPOLOGY

Cultural anthropology and sociology share an interest in social relations, organization, and behavior. However, important differences between these disciplines arose from the kinds of societies each traditionally studied. Initially sociologists focused on the industrial West; anthropologists, on nonindustrial societies. Different methods of data collection and analysis emerged to deal with those different kinds of societies. To study large-scale, complex nations, sociologists came to rely on questionnaires and other

TABLE 2-1**Absolute Dating Techniques**

Technique	Abbreviation	Materials Dated	Effective Time Range
Carbon-14	¹⁴ C	Organic materials	Up to 40,000 years
Potassium-argon	K/A and ⁴⁰ K	Volcanic rock	Older than 500,000 years
Uranium series	²³⁸ U	Minerals	Between 1,000 and 1,000,000 years
Thermoluminescence	TL	Rocks and minerals	Between 5,000 and 1,000,000 years
Electron spin resonance	ESR	Rocks and minerals	Between 1,000 and 1,000,000 years

means of gathering masses of quantifiable data. For many years sampling and statistical techniques have been basic to sociology, whereas statistical training has been less common in anthropology (although this is changing somewhat as anthropologists increasingly work in modern nations).

Traditional ethnographers studied small, nonliterate (without writing) populations and relied on ethnographic methods appropriate to that context. “Ethnography is a research process in which the anthropologist closely observes, records, and engages in the daily life of another culture—an experience labeled as the fieldwork method—and then writes accounts of this culture, emphasizing descriptive detail” (Marcus and Fischer 1986, p. 18). One key method described in this quote is **participant observation**—taking part in the events one is observing, describing, and analyzing.

Anthropology started to separate from sociology around 1900. Early students of society, such as the French scholar Émile Durkheim, were among the founders of both sociology and anthropology. Comparing the organization of simple and complex societies, Durkheim studied the religions of Native Australians (Durkheim 1912/2001), as well as mass phenomena (such as suicide rates) in modern nations (Durkheim 1897/1951). Eventually anthropology would specialize in the former, sociology in the latter.

➔ ETHNOGRAPHY: ANTHROPOLOGY'S DISTINCTIVE STRATEGY

Anthropology developed into a separate field as early scholars worked on Indian (Native American) reservations and traveled to distant lands to study small groups of foragers (hunters and gatherers) and cultivators. Traditionally, the process of becoming a cultural anthropologist has required a field experience in another society. Early ethnographers lived in small-scale, relatively isolated societies with simple technologies and economies.

Ethnography thus emerged as a research strategy in societies with greater cultural uniformity and less social differentiation than are found in large, modern, industrial nations. Traditionally, ethnographers have tried to understand the whole of a particular culture (or, more realistically, as much as they can, given limitations of time and perception). To pursue this goal, ethnographers adopt a free-ranging strategy for gathering information. In a given society or community, the ethnographer moves from setting to setting, place to place, and subject to subject to discover the totality and interconnectedness of social life. By expanding our knowledge of the range of human diversity, ethnography provides a foundation for generalizations about human behavior and social life. Ethnographers draw on varied techniques to piece together a picture of otherwise alien lifestyles. Anthropologists usually employ several (but rarely all) of the techniques discussed below (see also Bernard 2006).

➔ ETHNOGRAPHIC TECHNIQUES

The characteristic *field techniques* of the ethnographer include the following:

1. Direct, firsthand observation of behavior, including *participant observation*.
2. Conversation with varying degrees of formality, from the daily chitchat that helps maintain rapport and provides knowledge about what is going on, to prolonged *interviews*, which can be unstructured or structured.
3. The *genealogical method*.
4. Detailed work with *key consultants*, or *informants*, about particular areas of community life.
5. In-depth interviewing, often leading to the collection of *life histories* of particular people (narrators).
6. Discovery of local (native) beliefs and perceptions, which may be compared with the ethnographer's own observations and conclusions.
7. Problem-oriented research of many sorts.
8. Longitudinal research—the continuous long-term study of an area or site.
9. Team research—coordinated research by multiple ethnographers.

Observation and Participant Observation

Ethnographers must pay attention to hundreds of details of daily life, seasonal events, and unusual happenings. They should record what they see as they see it. Things never will seem quite as strange as they do during the first few weeks in the field. The ethnographer eventually gets used to, and accepts as normal, cultural patterns that initially were alien. Staying a bit more than a year in the field allows the ethnographer to repeat the season of his or her arrival, when certain events and processes may have been missed because of initial unfamiliarity and culture shock.

Many ethnographers record their impressions in a personal *diary*, which is kept separate from more formal *field notes*. Later, this record of early impressions will help point out some of the most basic aspects of cultural diversity. Such aspects include



Bronislaw Malinowski (1884–1942), who was born in Poland but spent most of his professional life in England, did fieldwork in the Trobriand Islands from 1914 to 1918. Malinowski is generally considered to be the father of ethnography. Does this photo suggest anything about his relationship with Trobriand villagers?

distinctive smells, noises people make, how they cover their mouths when they eat, and how they gaze at others. These patterns, which are so basic as to seem almost trivial, are part of what Bronislaw Malinowski called “the imponderabilia of native life and of typical behavior” (Malinowski 1922/1961, p. 20). These features of culture are so fundamental that natives take them for granted. They are too basic even to talk about, but the unaccustomed eye of the fledgling ethnographer picks them up. Thereafter, becoming familiar, they fade to the edge of consciousness. Initial impressions are valuable and should be recorded. First and foremost, ethnographers should try to be accurate observers, recorders, and reporters of what they see in the field.

Ethnographers strive to establish *rapport*, a good, friendly working relationship based on personal contact, with their hosts. One of ethnography’s most characteristic procedures is participant observation, which means that we take part in community life as we study it. As human beings living among others, we cannot be totally impartial and detached observers. We take part in many events and processes we are observing and trying to comprehend. By participating, we may learn why people find such events meaningful, as we see how they are organized and conducted.

In Arembepe, Brazil, I learned about fishing by sailing on the Atlantic with local fishers. I gave Jeep rides to malnourished babies, to pregnant mothers, and once to a teenage girl possessed by a spirit. All those people needed to consult specialists outside the village. I danced on Arembepe’s festive occasions, drank libations commemorating new births, and became a godfather to a village girl. Most anthropologists have similar field experiences. The common humanity of the student and the

studied, the ethnographer and the research community, makes participant observation inevitable.

Conversation, Interviewing, and Interview Schedules

Participating in local life means that ethnographers constantly talk to people and ask questions. As their knowledge of the local language and culture increases, they understand more. There are several stages in learning a field language. First is the naming phase—asking name after name of the objects around us. Later we are able to pose more complex questions and understand the replies. We begin to understand simple conversations between two villagers. If our language expertise proceeds far enough, we eventually become able to comprehend rapid-fire public discussions and group conversations.

One data-gathering technique I have used in both Arembepe and Madagascar involves an ethnographic survey that includes an interview schedule. In 1964, my fellow field-workers and I attempted to complete an interview schedule in each of Arembepe's 160 households. We entered almost every household (fewer than 5 percent refused to participate) to ask a set of questions on a printed form. Our results provided us with a census and basic information about the village. We wrote down the name, age, and gender of each household member. We gathered data on family type, religion, present and previous jobs, income, expenditures, diet, possessions, and many other items on our eight-page form.

Although we were doing a survey, our approach differed from the survey research design routinely used by sociologists and other social scientists working in large, industrial nations. That survey research, discussed below, involves sampling (choosing a small, manageable study group from a larger population). We did not select a partial sample from the total population. Instead, we tried to interview in all households in the community (that is, to have a total sample). We used an interview schedule rather than a questionnaire. With the **interview schedule**, the ethnographer talks face to face with people, asks the questions, and writes down the answers. *Questionnaire* procedures tend to be more indirect and impersonal; often the respondent fills in the form.

Our goal of getting a total sample allowed us to meet almost everyone in the village and helped us establish rapport. Decades later, Arembepeiros still talk warmly about how we were interested enough in them to visit their homes and ask them questions. We stood in sharp contrast to the other outsiders the villagers had known, who considered them too poor and backward to be taken seriously.

Like other survey research, however, our interview schedule did gather comparable quantifiable information. It gave us a basis for assessing patterns and exceptions in village life. Our schedules included a core set of questions that were posed to everyone. However, some interesting side issues often came up during the interview, which we would pursue then or later.

We followed such leads into many dimensions of village life. One woman, for instance, a midwife, became the key cultural consultant we sought out later when we wanted detailed information about local childbirth. Another woman had done an internship in an Afro-Brazilian cult (*candomblé*) in the city. She still went there regularly to study, dance, and get possessed. She became our *candomblé* expert.



A young interviewer at work on the campus of the University of Southern California (USC). Does this strike you as a formal or an informal interview?

Thus, our interview schedule provided a structure that *directed but did not confine* us as researchers. It enabled our ethnography to be both quantitative and qualitative. The quantitative part consisted of the basic information we gathered and later analyzed statistically. The qualitative dimension came from our follow-up questions, open-ended discussions, pauses for gossip, and work with key consultants.

The Genealogical Method

As ordinary people, many of us learn about our own ancestry and relatives by tracing our genealogies. Various computer programs now allow us to trace our “family tree” and degrees of relationship. The **genealogical method** is a well-established ethnographic technique. Early ethnographers developed notation and symbols to deal with kinship, descent, and marriage. Genealogy is a prominent building block in the social organization of nonindustrial societies, where people live and work each day with their close kin. Anthropologists need to collect genealogical data to understand current social relations and to reconstruct history. In many nonindustrial societies, kin links are basic to social life. Anthropologists even call such cultures “kin-based societies.” Everyone is related, and spends most of his or her time with relatives. Rules of behavior attached to particular kin relations are basic to everyday life (see Carsten 2004). Marriage also is crucial in organizing non-industrial societies because strategic marriages between villages, tribes, and clans create political alliances.

Key Cultural Consultants

Every community has people who by accident, experience, talent, or training can provide the most complete or useful information about particular aspects of life. These people are **key cultural consultants**, also called *key informants*. In Ivato, the Betsileo village in Madagascar where I spent most of my time, a man named Rakoto was particularly knowledgeable about village history. However, when I asked him to work with me on a genealogy of the fifty to sixty people buried in the village tomb, he called in his cousin Tuesdaysfather, who knew more about that subject. Tuesdaysfather had survived an epidemic of influenza that ravaged Madagascar, along with much of the world, around 1919. Immune to the disease himself, Tuesdaysfather had the grim job of burying his kin as they died. He kept track of everyone buried in the tomb. Tuesdaysfather helped me with the tomb genealogy. Rakoto joined him in telling me personal details about the deceased villagers.

Life Histories

In nonindustrial societies as in our own, individual personalities, interests, and abilities vary. Some villagers prove to be more interested in the ethnographer's work and are more helpful, interesting, and pleasant than others are. Anthropologists develop likes and dislikes in the field as we do at home. Often, when we find someone unusually interesting, we collect his or her **life history**. This recollection of a lifetime of experiences provides a more intimate and personal cultural portrait than would be possible otherwise. Life histories, which may be recorded or videotaped for later review and analysis, reveal how specific people perceive, react to, and contribute to changes that affect their lives. Such accounts can illustrate diversity, which exists within any community, since the focus is on how different people interpret and deal with some of the same problems. Many ethnographers include the collection of life histories as an important part of their research strategy.

Local Beliefs and Perceptions, and the Ethnographer's

One goal of ethnography is to discover local (native) views, beliefs, and perceptions, which may be compared with the ethnographer's own observations and conclusions. In the field, ethnographers typically combine two research strategies, the emic (native-oriented) and the etic (scientist-oriented). These terms, derived from linguistics, have been applied to ethnography by various anthropologists. Marvin Harris (1968/2001) popularized the following meanings of the terms: An **emic** approach investigates how local people think. How do they perceive and categorize the world? What are their rules for behavior? What has meaning for them? How do they imagine and explain things? Operating emically, the ethnographer seeks the "native viewpoint," relying on local people to explain things and to say whether something is significant or not. The term **cultural consultant**, or *informant*, refers to individuals the ethnographer gets to know in the field, the people who teach him or her about their culture, who provide the emic perspective.

The **etic** (scientist-oriented) approach shifts the focus from local observations, categories, explanations, and interpretations to those of the anthropologist. The etic

approach realizes that members of a culture often are too involved in what they are doing to interpret their cultures impartially. Operating etically, the ethnographer emphasizes what he or she (the observer) notices and considers important. As a trained scientist, the ethnographer should try to bring an objective and comprehensive viewpoint to the study of other cultures. Of course, the ethnographer, like any other scientist, is also a human being with cultural blinders that prevent complete objectivity. As in other sciences, proper training can reduce, but not totally eliminate, the observer's bias. But anthropologists do have special training to compare behavior between different societies.

What are some examples of emic versus etic perspectives? Consider our holidays. For North Americans, Thanksgiving Day has special significance. In our view (emically) it is a unique cultural celebration that commemorates particular historical themes. But a wider, etic, perspective sees Thanksgiving as just one more example of the postharvest festivals held in many societies. Another example: Local people (including many Americans) may believe that chills and drafts cause colds, which scientists know are caused by germs. In cultures that lack the germ theory of disease, illnesses are emically explained by various causes, ranging from spirits to ancestors to witches. *Illness* refers to a culture's (emic) perception and explanation of bad health, whereas *disease* refers to the scientific (etic) explanation of poor health, involving known pathogens.

Ethnographers typically combine emic and etic strategies in their fieldwork. The statements, perceptions, categories, and opinions of local people help ethnographers understand how cultures work. Local beliefs are also interesting and valuable in themselves. However, people often fail to admit, or even recognize, certain causes and consequences of their behavior. This is as true of North Americans as it is of people in other societies.

Problem-Oriented Ethnography

Although anthropologists are interested in the whole context of human behavior, it is impossible to study everything. Most ethnographers now enter the field with a specific problem to investigate, and they collect data relevant to that problem (see Chiseri-Strater and Sunstein 2001; Kutsche 1998). Local people's answers to questions are not the only data source. Anthropologists also gather information on factors such as population density, environmental quality, climate, physical geography, diet, and land use. Sometimes this involves direct measurement—of rainfall, temperature, fields, yields, dietary quantities, or time allocation (Bailey 1990; Johnson 1978). Often it means that we consult government records or archives.

The information of interest to ethnographers is not limited to what local people can and do tell us. In an increasingly interconnected and complicated world, local people lack knowledge about many factors that affect their lives. Our local consultants may be as mystified as we are by the exercise of power from regional, national, and international centers.

Longitudinal Research

Geography limits anthropologists less now than in the past, when it could take months to reach a field site, and return visits were rare. New systems of transportation allow anthropologists to widen the area of their research and to return repeatedly. Ethnographic

reports now routinely include data from two or more field stays. **Longitudinal research** is the long-term study of a community, region, society, culture, or other unit, usually based on repeated visits.

One example of such research is the longitudinal study of Gwembe District, Zambia. This study, planned in 1956 as a longitudinal project by Elizabeth Colson and Thayer Scudder, continues with Colson, Scudder, and their associates of various nationalities. Thus, as is often the case with longitudinal research, the Gwembe study also illustrates team research—coordinated research by multiple ethnographers (Colson and Scudder 1975; Scudder and Colson 1980). Four villages, in different areas, have been followed for more than five decades. Periodic village censuses provide basic data on population, economy, kinship, and religious behavior. Censused people who have moved are traced and interviewed to see how their lives compare with those of people who have stayed in the villages.

A series of different research questions have emerged, while basic data on communities and individuals continue to be collected. The first focus of study was the impact of a large hydroelectric dam, which subjected the Gwembe people to forced resettlement. The dam also spurred road building and other activities that brought the people of Gwembe more closely in touch with the rest of Zambia. In subsequent research Scudder and Colson (1980) examined how education provided access to new opportunities as it also widened a social gap between people with different educational levels. A third study then examined a change in brewing and drinking patterns, including a rise in alcoholism, in relation to changing markets, transportation, and exposure to town values (Colson and Scudder 1988).

Team Research

As mentioned, longitudinal research often is team research. My own field site of Arembepe, Brazil, for example, first entered the world of anthropology as a field-team village in the 1960s. It was one of four sites for the now defunct Columbia-Cornell-Harvard-Illinois Summer Field Studies Program in Anthropology. For at least three years, that program sent a total of about twenty undergraduates annually, the author included, to do brief summer research abroad. We were stationed in rural communities in four countries: Brazil, Ecuador, Mexico, and Peru. Since my wife, Isabel Wagley-Kottak, and I began studying it in 1962, Arembepe has become a longitudinal field site. Three generations of researchers have monitored various aspects of change and development. The community has changed from a village into a town and illustrates the process of globalization at the local level. Its economy, religion, and social life have been transformed (see Kottak 2006).

Brazilian and American researchers worked with us on team research projects during the 1980s (on television's impact) and the 1990s (on ecological awareness and environmental risk perception). Graduate students from the University of Michigan have drawn on our baseline information from the 1960s as they have studied various topics in Arembepe. In 1990 Doug Jones, a Michigan student doing biocultural research, used Arembepe as a field site to investigate standards of physical attractiveness. In 1996–1997, Janet Dunn studied family planning and changing female reproductive strategies. Chris

O’Leary, who first visited Arembepe in summer 1997, investigated a striking aspect of religious change there—the arrival of Protestantism; his dissertation (O’Leary 2002) research then examined changing food habits and nutrition in relation to globalization. Arembepe is thus a site where various field-workers have worked as members of a longitudinal team. The more recent researchers have built on prior contacts and findings to increase knowledge about how local people meet and manage new circumstances.

➔ SURVEY RESEARCH

As anthropologists work increasingly in large-scale societies, they have developed innovative ways of blending ethnography and survey research (Fricke 1994). Before examining such combinations of field methods, let’s consider survey research and the main differences between survey research and ethnography. Working mainly in large, populous nations, sociologists, political scientists, and economists have developed and refined the **survey research** design, which involves sampling, impersonal data collection, and statistical analysis. Survey research usually draws a **sample** (a manageable study group) from a much larger population. By studying a properly selected and representative sample, social scientists can make accurate inferences about the larger population.

In smaller-scale societies and communities, ethnographers get to know most of the people. Given the greater size and complexity of nations, survey research cannot



Janet Dunn, one of many anthropologists who have worked in Arembepe. Where is Arembepe, and what kinds of research have been done there?

help being more impersonal. Survey researchers call the people they study *respondents*. These are people who respond to questions during a survey. Sometimes survey researchers interview them personally. Sometimes, after an initial meeting, they ask respondents to fill out a questionnaire. In other cases researchers mail or e-mail questionnaires to randomly selected sample members or have paid assistants interview or telephone them. In a **random sample**, all members of the population have an equal statistical chance of being chosen for inclusion. A random sample is selected by randomizing procedures, such as tables of random numbers, which are found in many statistics textbooks.

Probably the most familiar example of sampling is the polling used to predict political races. The media hire agencies to estimate outcomes and do exit polls to find out what kinds of people voted for which candidates. During sampling, researchers gather information about age, gender, religion, occupation, income, and political party preference. These characteristics (**variables**—attributes that vary among members of a sample or population) are known to influence political decisions.

Many more variables affect social identities, experiences, and activities in a modern nation than in the small communities where ethnography grew up. In contemporary North America hundreds of factors influence our behavior and attitudes. These social predictors include our religion; the region of the country we grew up in; whether we come from a town, suburb, or city; and our parents' professions, ethnic origins, and income levels.

Ethnography can be used to supplement and fine-tune survey research. Anthropologists can transfer the personal, firsthand techniques of ethnography to virtually any setting that includes human beings. A combination of survey research and ethnography can provide new perspectives on life in **complex societies** (large and populous societies with social stratification and central governments). Preliminary ethnography also can help develop culturally appropriate questions for inclusion in surveys.

In any complex society, many predictor variables (*social indicators*) influence behavior and opinions. Because we must be able to detect, measure, and compare the influence of social indicators, many contemporary anthropological studies have a statistical foundation. Even in rural fieldwork, more anthropologists now draw samples, gather quantitative data, and use statistics to interpret them (see Bernard 2006; Bernard, ed. 1998). Quantifiable information may permit a more precise assessment of similarities and differences among communities. Statistical analysis can support and round out an ethnographic account of local social life.

However, in the best studies, the hallmark of ethnography remains: Anthropologists enter the community and get to know the people. They participate in local activities, networks, and associations in the city, town, or countryside. They observe and experience social conditions and problems. They watch the effects of national and international policies and programs on local life. The ethnographic method and the emphasis on personal relationships in social research are valuable gifts that cultural anthropology brings to the study of any society.

ANTHROPOLOGY TODAY

Archaeologist in New Orleans Finds a Way to Help the Living

One role for anthropologists is to help communities preserve their culture in the face of threat or disaster. The following account describes the work of an anthropologist doing public archaeology in New Orleans in the wake of Hurricane Katrina. Cultural resource management, as discussed here, is one form of applied anthropology: the application of anthropological perspectives, theory, methods, and data to identify, assess, and solve social problems.

"That's a finger bone."

Shannon Lee Dawdy kneeled in the forlorn Holt graveyard to touch a thimble-size bone poking up out of the cracked dirt. She examined it without revulsion, with the fascination of a scientist and with the sadness of someone who loves New Orleans.

Dr. Dawdy, a 38-year-old assistant professor of anthropology at the University of Chicago, is one of the more unusual relief workers among the thousands who have come to the devastated expanses of Louisiana, Mississippi and Texas in the aftermath of Hurricanes Katrina and Rita. She is officially embedded with the Federal Emergency Management Agency [FEMA] as a liaison to the state's historic preservation office.

Her mission is to try to keep the rebuilding of New Orleans from destroying what is left of its past treasures and current culture.

While much of the restoration of the battered Gulf Coast is the effort of engineers and machines, the work of Dr. Dawdy, trained as an archaeologist, an anthropologist and a historian, shows that the social sciences have a role to play as well. "It's a

way that archaeology can contribute back to the living," she said," which it doesn't often get to do."

Holt cemetery, a final resting place for the city's poor, is just one example of what she wants to preserve and protect.

Other New Orleans graveyards have gleaming mausoleums that keep the coffins above the marshy soil. But the coffins of Holt are buried, and the ground covering many of them is bordered with wooden frames marked with makeshift headstones.

Mourners decorate the graves with votive objects: teddy bears for children and an agglomeration of objects, including ice chests, plastic jack-o'-lanterns and chairs, on the graves of adults. There is the occasional liquor bottle. . . .

Many of the objects on the graves were washed away by the storm, or shifted from one part of the graveyard to another. Dr. Dawdy has proposed treating the site as archaeologists would an ancient site in which objects have been exposed on the surface by erosion.

Before the hurricanes, the cemetery was often busy, a hub of activity on All Soul's Day, when people came to freshen the grave decorations.

"The saddest thing to me now was how few people we see," she said, looking at the empty expanse and the scarred live oaks. "I realize we're having enough trouble taking care of the living," she added, but the lack of activity in a city normally so close to the spirits of the past "drove home how far out of whack things are." . . .

Treating Holt as an archaeological site means the government should not treat the votive artifacts as debris, she said, but as the religious artifacts that they are, with some effort to restore the damaged site, to find the objects and at least record where they came from.

Continued

ANTHROPOLOGY TODAY

FEMA simply tries to clean up damaged areas, and its Disaster Mortuary Operational Response Teams—called Dmort—deal with the bodies of the dead and address problems in cemeteries that might lead to disease.

If such places are destroyed, Dr. Dawdy said, “then people don’t feel as connected there.” She added that they might be more willing to come back to a damaged city if they felt they were returning to a recognizable home.

Though she has deep emotional ties to New Orleans, Dr. Dawdy was born in Northern California. She came here in 1994 to write her master’s thesis for the College of William & Mary, and, “I wrote it all day,” she said. “If I had written a minimum of five pages, I could come out for a parade at night.” Over the eight weeks it took to finish the project, she said: “I fell in love with New Orleans. I really consider it the home of my heart.”

She started a pilot program at the University of New Orleans, working with city planners and grants for research projects that involved excavation, oral history and hands-on work with the city to safeguard its buried treasures.

She left that job to earn a double doctorate at the University of Michigan in anthropology and history that focused on French colonial times in New Orleans, then landed a coveted faculty position at the University of Chicago. . . .

Even before Hurricane Katrina, Dr. Dawdy had found ways to return to New Orleans. In 2004, she made an intriguing discovery while researching a possible archaeological site under an old French Quarter parking garage slated for demolition. Property records and advertisements from the 1820s said that the site had

been the location of a hotel with an enticing name: the Rising Sun Hotel.

Dr. Dawdy found a January 1821 newspaper advertisement for the hotel in which its owners promised to “maintain the character of giving the best entertainment, which this house has enjoyed for twenty years past.”

It went on: “Gentlemen may here rely upon finding attentive Servants. The bar will be supplied with genuine good Liquors; and at the Table, the fare will be of the best the market or the season will afford.” . . .

New Orleans, she noted, has always been known for its libertine lifestyle. The French all but abandoned the city as its colony around 1735 as being unworthy of the nation’s support as a colony. Novels like “Manon Lescaut” portrayed the city as a den of iniquity and corruption, and across Europe, “they thought the locals were basically a bunch of rogues, immoral and corrupt,” Dr. Dawdy said.

She added that she saw parallels to today, as some skepticism emerges about rebuilding the city. Dr. Dawdy characterized that posture as, “Those people in New Orleans aren’t worth saving, because they’re all criminals anyway.” But even if the devastation makes it hard to envision the road back, the city, she said, is worth fighting for.

“The thing about New Orleans that gives me hope is they are so tied to family, place, history,” Dr. Dawdy said. “If anyone is going to stick it out, out of a sense of history, out of a sense of tradition, it is New Orleans.”

*Source: “Archaeologist in New Orleans Finds a Way to Help the Living,” by John R. Schwartz from *The New York Times*, January 3, 2006. Reprinted by permission.*

SUMMARY

1. Because science exists in society, and in the context of law and ethics, anthropologists can't study things simply because they happen to be interesting or of scientific value. Anthropologists have obligations to their scholarly field, to the wider society and culture (including that of the host country), and to the human species, other species, and the environment.
2. Physical anthropologists and archaeologists pursue diverse research topics, using varied methods and often working together. At an archaeological site, physical anthropologists may complement the picture of ancient life by examining skeletons to reconstruct their physical traits, health status, and diet. Remote sensing may be used to locate ancient footpaths, roads, canals, and irrigation systems, which can then be investigated on the ground.
3. Studies of primates suggest hypotheses about behavior that humans do or do not share with our nearest relatives—and also with our hominid ancestors. Anthropometry, the measurement of human body parts and dimensions, is done on living people and on skeletal remains from sites.
4. Central to physical anthropology is bone biology—the study of bone genetics; cell structure; growth, development, and decay; and patterns of movement. Paleopathology is the study of disease and injury in skeletons from archaeological sites. Molecular anthropology uses genetic analysis (of DNA sequences) to assess evolutionary relationships.
5. Archaeologists combine both local (excavation) and regional (systematic survey) perspectives. Sites are excavated because they are in danger of being destroyed or because they address specific research interests. There are many kinds of archaeology, such as historical, classical, and underwater archaeology.
6. The fossil record is not a representative sample of all the plants and animals that have ever lived. Hard parts, such as bones and teeth, preserve better than soft parts, such as flesh and skin, do. Anthropologists and paleontologists use stratigraphy and radiometric techniques to date fossils. Carbon-14 (^{14}C) dating is most effective with fossils less than 40,000 years old. Potassium-argon (K/A) dating can be used for fossils older than 500,000 years.
7. Ethnographic methods include firsthand and participant observation, rapport building, interviews, genealogies, work with key consultants or informants, collection of life histories, discovery of local beliefs and perceptions, problem-oriented and longitudinal research, and team research. Ethnographers work in communities and form personal relationships with local people as they study their lives.
8. An interview schedule is a form an ethnographer completes as he or she visits a series of households. Key consultants, or informants, teach us about particular areas of local life. Life histories dramatize the fact that culture bearers are individuals. Such case studies document personal experiences with culture and culture change. Genealogical information is particularly useful in societies in which principles of kinship and marriage organize social and political life. Emic approaches focus on native perceptions and explanations. Etic approaches give

priority to the ethnographer's own observations and conclusions. Longitudinal research is the systematic study of an area or site over time.

9. Traditionally, anthropologists worked in small-scale societies; sociologists, in modern nations. Different techniques developed to study such different kinds of societies. Anthropologists do their fieldwork in communities and study the totality of social life. Sociologists use surveys and study samples to make inferences about a larger population. Anthropologists may employ ethnographic procedures to study cities, towns, or rural areas.

KEY TERMS

absolute dating (p. 31)

anthropometry (p. 26)

bone biology (p. 26)

complex societies (p. 42)

cultural consultant (p. 38)

emic (p. 38)

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