NTHROPOLOGY



INTRODUCTION TO ANTHROPOLOGY

Anthropology is the comprehensive study of human beings. The term derives from the Greek words anthropos ("humans" or "humankind") and logos ("study")

- Anthropologists take a holistic approach, studying the entirety of the human condition and all aspects of all human groups, biologically and culturally, in the present and the past,
- Anthropologists maintain a cross-cultural perspective, study ing and comparing all past and present human societies. They consider the basis for diversity in terms of both biology and culture, contributing to knowledge about the roles that "nature" and "nurture" play in defining human similarity and diversity.

BIOLOGICAL ANTHROPOLOGY

Biological anthropology: The study of human biological variation and evolution, including human genetics, physiology, and the biological adaptations of living humans. It draws on fossil evidence of our human ancestors to study human evolution

- · Osteology: The study of excavated human bones in order to reconstruct age, sex, gender, diet, and general health.
- Primatology: The study of living primates and their ancestors. Primatologists attempt to gain insight into the social life and behavior of human ancestors and to determine what distinguishes humans from other animal species.

ARCHAEOLOGY

Archgeology: The study of past human cultures through exca

 Prehistoric archaeology is the study of societies prior to the invention of writing, whereas historic archaeology is the study of past literate societies throughout the globe

- Archaeologists study artifacts (materials modified by humans) and the remains of features (architectural remains, hearths, pits, and other material remains of past human activities). They also study groupings of artifacts and features known as site as well as the arrangement of sites throughout the landscape.
- Archaeologists reconstruct and interpret past ways of life and their cultural evolution (transformation over time, without implying any inevitable progression).

CULTURAL ANTHROPOLOGY

- Cultural anthropology: The study of living human cultures.

 Ethnography: The detailed description of a contemporary culture through direct observation.
 - Ethnology: A cross-cultural evaluation of a topic using ethnographic data
- Ethnohistory: The study of cultures from the recent past through evidence from historic documents and early ethnographic and ethnological research. Ethnohistory cuts across different disciplines, including anthropology, archaeology, and history.

LINGUISTIC ANTHROPOLOGY

tion, including links between language and culture, development and use of language, and changes in language over time.

- Structural linguistics: The study of universal features of language, variation within languages, and the manner in which language reflects cultural perceptions and beliefs.
- Historical linguistics: The study of ancient languages as a means
- differences and language within cultures and across cultures.

METHODS

Each of the subfields of anthropology uses different field methods to collect data, as well as different methods for interpreting this data obtained in the field.

METHODS IN BIOLOGICAL ANTHROPOLOGY

- Anthropometry: Measurement of human body parts, of both living humans and skeletal remains, to study nutrition, development, and biological adaptation.
- Osteology: The use of skeletal biology techniques to reconstruct age, sex, gender, diet, and general health data from human skeletal remains. The specialized study of injury and disease in skeletal remains is called paleopathology.
- Primatology: First-hand observation of nonhuman primate behavior in experimental settings, zoos, and primates' natural environments.
- Molecular anthropology: The use of genetic analysis techniques to study human evolution, assess the degree of relatedness between humans and living primate species, and reconstruct historical patterns of human migration.
- Paleoanthropology: The study of human evolution from fossils, the hardened remains of ancient plant and animal life. Paleoanthropologists use the same techniques for excavating and dating fossils that archaeologists use.

ARCHAEOLOGICAL METHODS

- Survey: A systematic examination of a region to identify archaeological sites.
- Pedestrian survey involves the use of visual indicators at the surface to identify sites.
- Remote sensing uses modern technology to identify sites
- Aerial photography and satellite imaging may pro-vide clues to site locations that are not readily apparent from the surface.
- Other techniques, such as geomagnetic sensing and ground-penetrating radar, identify anomalies within the Earth's magnetic field or soils that may be characteristic of features within buried archaeological sites. Excavation: Careful removal of soil from a site. All informa-
- tion on the location of soil types, artifacts, and features is carefully recorded. Archaeologists use data from excavation to interpret past cultural activities conducted at sites
- Dating methods: Techniques to determine the age of excavated fossils, artifacts, and features.
- Relative dating: Use of soil and rock strata or the presence of fossils or artifacts of known age to determine the age of fossils, artifacts, or soil strata in relation to one another.
- Many relative dating techniques rely on stratigraphy, the study of the accumulation of soils and rock in strata
- Law of superposition: Borrowed from geology; stipulates that, due to sediment formation processes over time. lower strata are older and higher strata are younger.
- Absolute dating: The determination of actual numerical age of fossils, artifacts, or strata. Many absolute dating techniques rely on the known rate of radioactive decay of unstable isotopes-varieties of elements that have unstable nuclei. Specific techniques include radiocarbon dating potassium-argon dating, thermoluminescence dating, uranium series dating, and electron spin resonance dating.

Linguistic anthropology: The study of language and communica-

- to reconstruct historical relationships between cultures.
- Sociolinguistics: The study of the relationship between social

CULTURE AND ETHNICITY

Culture is the central concept in anthropology. It consists of the shared customs, traditions, values, ideas, and material products of a particular group of people.

- Culture entails the totality of the human experience, spanning behavioral, ideational, and material dimensions, Culture is unique to humans and perhaps the foremost aspect of humankind that distinguishes us from other animals. Culture provides a degree of continuity in the behaviors, thoughts, and production of material goods within a group.
- Anthropologists distinguish culture from society (a group of humans living together in a shared territory). As we see in nations today, multiple cultures may exist within a single society as a result of processes like migration or cultural interaction.

Definitions of culture: Anthropologists have set forth many definitions of culture since the late 1800s. Each definition emphasizes different aspects depending on the orientation of the researcher.

- Behavioral and ideational culture: In Primitive Culture (1871) Edward B. Tylor defines culture as "that complex whole which includes knowledge, belief, art, morals, law, custom and any other capabilities of man as a member of society."
 - · The behavioral aspect of culture involves a set of customs (predispositions toward certain actions) · The ideational aspect consists of a particular world-
- view or cosmology (a set of beliefs and values). Culture does not dictate behavior and beliefs but rather pre disposes members to particular behaviors and thoughts.
- Material culture: Culture also has a material aspect that arises from the transformation of materials through human action.
- Material culture consists of the built, material environment within which the members of a culture reside, including **arti**facts (materials modified by humans) and built structures (from small dwellings to monumental public architecture)
- Systems of behavior and belief influence the construction of material culture; conversely, material culture reinforces and influences systems of behavior and belief

Attributes of culture: Though cultures across the globe exhibit great diversity, all human cultures share key attributes. Culture is: Learned: Culture passes through the generations via learning rather than biology (as with instinct in other animals). The

- process of learning culture as a child is called enculturation Symbolic: Transmission of culture depends upon humans' abil ity to use symbols, signs that bear no natural relationship to what they signify. The ability to conceptualize and learn symbols distinguishes humans from other animals. Language is a complex verbal symbolic system common to all human cultures.
- Shared: Culture is shared by all individuals raised, or enculturated, within a group. Members of a culture share certain sets of customs or behaviors, ways of thinking, and dispositions toward the selection and modification of materials People generally share cultural traits with members of a society who share the same region of origin, religious back ground, or other group affiliation. Anthropologists call groups or subgroups within a larger society **subcultures**.

- Integrated: All aspects of culture are patterned, integrated systems. Economic systems, political systems, systems of kinship and descent, marriage, gender, religion, and the arts are connected; change in one may lead to change in others.
- Adaptive: Culture is a means of adaptation. Other animals adapt to changing environmental conditions through biological adaptation alone; humans adapt biologically and culturally, through changes in materials, behaviors, and ideas,
- Cultural adaptation has allowed humans to inhabit harsh physical environments throughout the globe
- Cultures may also possess maladaptive traits that limit or diminish chances for survival and reproduction. A group's depletion of strategic resources, for example, may endanger its long-term survival.

Culture change: All human cultures change over time, via a number of different mechanisms

- Diffusion: The spread of cultural traits among societies, through migration, trade, or other interaction.
- Acculturation: The exchange of cultural traits among societies, in which a subordinate group adopts the traits of the dominant group. Both groups continue to maintain separate identities.
- Assimilation: The adoption of a dominant culture by subordi nate groups. Assimilation is acculturation to the point that sub-
- ordinate groups no longer exist as separate cultural identities. **Independent invention:** The rise of similar cultural traits in different cultures that are not interacting with each other For example, societies in the Americas invented agriculture independently and without contact with societies in Europe that also had invented agriculture.

- Ethnocentrism: Judging other cultures by the standards and values of one's own culture rather than by the specific standards and values of that culture. Ethnocentrism leads people to view their own culture as superior and other cultures as inferior.
- Cultural relativism: The idea that the behavior, values, and standards of a culture should be judged only within the context of that culture. Anthropologists aim to describe cultures objectively and not judge them through the lens of the values and morality of their own cultures.
- Cultural universals: Cultural traits (e.g., language, marriage, divi sion of labor, body ornamentation, decorative art, belief in the supernatural) that all human cultures share. Aspects of these traits vary, but their presence is universal. Some anthropologists believe that this universality reflects an innate human capacity for culture that distinguishes humans from other animals

ETHNICITY

Ethnicity is a sense of identification with a particular ethnic group and the assignment of people to this group by others

- An ethnic group shares common origins, language, and history, and possesses similar customs, values, and beliefs
- Ethnic groups share a culture and, as the result of migration or other historical processes, may exist as separate subcultures within a larger society.
 - The degree to which ethnic groups may undergo acculturation or assimilation to the dominant culture within a society varies.

METHODS IN CULTURAL ANTHROPOLOGY

- Participant observation: The primary means of obtaining ethnographic data on cultures, in which the anthropologist lives within a culture for an extended period as both an active participant in and observer of customs, practices, behaviors, social interaction, rituals, ceremonies, and other occurrences in the daily life of the members of the group. Ethnographers also obtain data from conversations and formal or informal interviews.
- Key informants: Knowledgeable people within a culture with whom the anthropologist establishes a relationship and who provide information about certain aspects of their culture. The information that key informants provide helps the anthropologist interpret his or her observations. Sometimes, key informants become collaborators in the research.
- **Genealogical method:** A system of diagrams and symbols that cultural anthropologists use to record relationships of kinship, descent, and marriage
- Emic perspective: An insider's perspective on a culture. Ethnographers strive to achieve an understanding of a culture from an emic perspective.
- Etic perspective: An outsider's perspective on a culture. An etic perspective includes the level of abstract categories and explanations used within anthropological theories to understand cross-cultural comparisons.

METHODS IN LINGUISTIC ANTHROPOLOGY

- Progmatics: The study of language in use, on the basis of tape recordings or video recordings of actual human conversation.
- Historical linguistics: The use of formal methods to identify changes in language over time and across regions. The degree of similarity between present languages is used to reconstruct ancestral languages and language family trees.

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ANTHROPOLOG

HUMAN BIOLOGICAL DIVERSITY

Biologically, humans exhibit diversity in a variety of mental and physical traits. Biological anthropologists document this diversity by studying human physiology and genetics

Anthropologists view race as a cultural construction.

- Historically, societies have distinguished different ethnic groups (often based on differences in skin color) and have believed that divisions reflect biologically separate races
- Scientific research, however, has shown that races cannot be defined biologically. Human biological traits do not fall within discrete divisions associated with ethnic groups, Instead, traits exhibit variation along a continuous spectrum.
- Today, biological anthropologists place more emphasis on trying to explain human biological diversity than on trying to classify

humans by race biologically. They now understand differences in skin color in terms of the interplay of the environment and genes through the process of natural selection (see below).

Although intelligence varies widely across different humar individuals, anthropological research has demonstrated clearly that these differences do not extend to entire groups

- Scores on intelligence and aptitude tests do sometimes exhibit differences among groups. Research has shown, how ever, that these score variations result from different social environments rather than different genetic capacities
- Because intelligence tests are themselves generated by individuals with particular cultural and educational back grounds, members of groups who share the same culture

class, or education as the creators of the tests generally score higher than those from different groups.

KEY TERMS

- Adaptation: A genetic trait that grants improved ability to survive, reproduce, and withstand environmental change. Biological adaptation, coupled with cultural adaptation, has enabled humans to settle virtually all corners of the world.
- Acclimatization: Physiological changes that occur in response to environmental conditions during an individual's lifetime.
- Genotype: The array of genes that an individual possesses.
- Phenotype: The observable traits an individual possesses. Phenotype results from a combination of genotype and the influence of environmental factors.

HUMAN BIOLOGICAL EVOLUTION

EVOLUTION AND GENETICS

- Defined generally, evolution is the transformation of living things over long time periods
- In the mid-1800s, two British researchers, Charles Darwin and Alfred Russel Wallace, tried to iden tify the mechanism that caused organisms to transform and new species to emerge over time.
- Working independently, Darwin and Wallace both concluded that **natural selection** was the mechanism behind evolution. They introduced the theory in a joint presentation in 1858, and Darwin elaborated on it in On the Origin of Species (1859).
- According to the theory of natural selection, organisms that have traits best suited to particular environmental conditions have better opportunities for survival and reproduction. As a result, these favorable traits are transmitted in greater proportions to succeeding generations of organisms. Over time, organisms with the traits endure, while those without the traits die out.

- For natural selection to take place, biological variations must exist within populations and must be passed on differentially to subsequent generations. The study of genetics allows an understanding of these causes of biological variation.
- In the 1860s, Austrian botanist Gregor Mendel conducted a series of breeding experiments with pea plants that laid the foundation for the study of genetics.
 - Mendel concluded that heredity is determined by distinct units, now known as genes.
 - Genes may be **dominant** or **recessive**. Dominant genes mask other genes and are expressed in an organism's phenotype whenever they are present. Recessive genes are manifest in an organism's phenotype only if genes for associated dominant genes are absent.

- Cline: The gradual range of variation in gene frequencies between populations. Clingl distributions consist of zones on maps depicting the locations of genetic traits.
- DNA (deoxyribonucleic acid): The chemical that codes information in an organism's genes and thus determines the organism's genetic makeup.
- Mutation: An alteration in an individual organism's genetic makeup.
- Genetic drift: A change in gene frequencies within a small population as a result of random alteration rather than natural selection
- Gene flow: The transfer of genetic material between populations of the same species through mating and reproduction
- Species: A population of organisms capable of mating and producing offspring that are themselves capable of survival and reproduction Speciation: Change within the genetic makeup of a population over time until the point that
- a new species develops.

PRIMATES

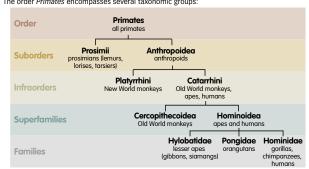
The zoological order **Primates** includes prosimians, monkeys, apes, and humans.

PRIMATOLOGY

- **Primatologists** study primate evolution and the behavior of living nonhuman primates in order to gain insight into the social life and behavior of human ancestors and to determine what distinguishes humans from other animal species.
- Humans have more than 98% of their DNA in common with chimpanzees and gorillas. The study of these close human relatives allows anthropologists to make inferences about the traits and behaviors of **hominids**, the group consisting of living humans and extinct human ancestors.

PRIMATE CLASSIFICATION

The order *Primates* encompasses several taxonomic groups.



PRIMATE EVOLUTION

Primate evolution began by at least the early Cenozoic era, approximately 65 million years ago (mya). The epochs of the Cenozoic era saw major developments in primate evolution.

Epoch	Developments		
Paleocene	65–55 mya: Prosimians, the earliest primates, emerged		
Eocene	54–38 mya: Prosimians flourished		
Oligocene	38–23 mya: Anthropoids emerged as predominant primates		
Miocene	23–16 mya: New anthropoids emerged, such as <i>Proconsul</i> , which may be an ancestor of living Old World monkeys and apes		
	16–10 mya: Earliest hominoids emerged, including Afropithecus and Kenyapithecus		
	10–5 mya: Other hominoids emerged, including Sivapithcus, Gigantopithecus, Dryopithecus, and Oreopithecus		
	8–5 mya : Ancestors of humans are believed to have diverged from the ancestors of chimpanzees and gorillas		
	Sahelanthropus tchadensis: A new fossil dating from about 7–6 mya; may combine traits characteristic of chimpanzees with more human qualities, such as thicker tooth enamel and a less protruding snout		

PRIMATE TRAITS AND BEHAVIORS

Primates possess several characteristic traits and behaviors that distinguish them from other animals. These traits, which humans share, may have been influential in human biological evolution.

- Ability to grasp: Primates have the ability to grasp objects with their hands and feet, and sometimes with a prehensile tail.
 - Opposable thumbs: Thumbs that can touch each of the other fingers, which allow pri nates to grasp objects firmly
- Precision grip: The ability to grasp between the thumb and index finger, which is crucial to tool use.
- Sensory abilities: Primates have a more acute sense of sight and less acute sense of smell compared to other mammals. Primates' sense of touch is concentrated primarily within the fingertips rather than the muzzle as in other mammals.
- Complex brain: Primate brains focus more intensively on memory, thought, and association than other mammal brains. Primates also have a higher brain-to-body-size ratio than other animals.
- High parental investment: Primates usually give birth to a single offspring at a time and provide that offspring with more intensive care over a longer dependency period compared to other mammals.
- Social groups: Primates live within groups of other members of the same species
- Tool use: Chimpanzees (humans' closest primate relatives) have the ability to manufacture and use simple tools to obtain food and water. They modify twigs and use them to pull termites out of their nests, and use leaves as receptacles for water. Orangutans and gorillas do not make tools but do have the ability to aim and throw objects. These abilities were important in the manufacture of tools and projectile weaponry by early hominids and humans.
- Communication: Nonhuman primates use call systems to communicate with one another in social groups in their natural settings, and also are able to learn symbols. Chimpanzees and gorillas have been taught to understand and use sign language; however, these species have not invented systems of sign language independently and lack the level of competency with symbolic behavior that humans possess.
- Hunting: Chimpanzees form hunting parties to hunt small animals (primarily red colobus monkeys). Baboons have been observed hunting young antelopes

DIFFERENCES BETWEEN HUMANS AND OTHER PRIMATES

Social behavior:

- . In human societies, the strongest, most aggressive individuals do not dominate as they do in nonhuman primate social groups
- Humans have the strongest tendency toward sharing and cooperation of all the primates
- Kinship and marriage: All human societies feature some type of marriage and a taboo on incest in some form (see Marriage, other side)
- Exogamy (marriage outside an individual's group) and kinship systems link humans beyond an individual's immediate social group. Bonds between human populations also serve as a basis for other long-distance activities and exchanges
- Nonhuman primates lack any resemblance of pair bonding similar to marriage or recognition of descent in the form of kin relations. Among apes, mating generally occurs when females enter estrus, during ovulation.



HOMINIDS

Hominids (members of the zoological family *Hominidae*) include living humans and extinct human ancestors who diverged with the ancestors of chimpanzees and gorillas.

BIPEDALISM

Hominids are distinguished from other primates by a skeleton adapted for **bipedalism**—the habit of walking upright on the two bind limbs

- Although other primate species are able to stand on two legs temporarily, only hominids evolved as habitual bipeds, for whom bipedalism is the primary form of movement.
- Some closely related primate species exhibit knuckle walking, a pattern of movement in which long arms and the knuckles of the hand support the weight of the upper body.

Several **theories for the origins of bipedalism** within human ancestors have been proposed.

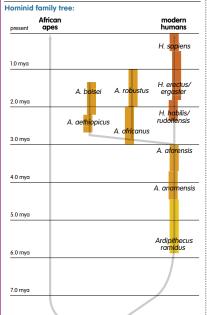
- Adaptation to savanna: Bipedalism may have allowed primates to move about more freely within savanna environments (grassland with scattered trees, prevalent in Africa) and to watch out for predators over the tall grasses. However, evidence from recent fossil finds suggests that early binedal homipids lived in frorested areas
- that early bipedal hominids lived in forested areas.

 Carrying behavior: Bipedalism allows hominids to carry objects in the two front limbs (arms), enabling the carrying of food and easier transportation of the young. Bipedalism also frees the hands to carry tools and weapons.
- Foraging: Bipedalism may have allowed both hands to be used for foraging seeds, nuts, and berries more efficiently.
- Heat stress: Bipedal locomotion minimizes stress from the extreme heat present in the savanna of East Africa. A bipedal stance minimizes the portion of the body exposed to the sun, and the distance of the head above the ground maximizes exposure to cooling breezes.

HOMINID SPECIES

Though some details of the **hominid family tree** remain in question, anthropologists generally agree about the primary ancestral relationships among hominid species.

- The lines leading to chimpanzees, gorillas, and humans are believed to have diverged sometime between 8–5 mva.
- Fossils of the earliest hominids, from about 5.8–1.8 mya, have been found solely in Africa, implying that hominids initially emerged on this continent.
- Paleoanthropologists generally agree that there were multiple lines of hominid species. The robust australopithecines, which coexisted with the early species of the genus Homo, are not considered ancestral to humans and became extinct approximately 1 mya.



ARDIPITHECUS RAMIDUS

The earliest hominid, *Ardipithecus ramidus*, is represented by fossils found in East Africa from 5.8–4.4 mya. The fossils indicate that *A. ramidus* was capable of fully **bipedal movement** and that it possessed **apelike size and dentifion** (tooth characteristics). These hominids inhabited forested environments.

common ancestor

AUSTRALOPITHECINES

Members of the genus **Australopithecus** (a genus of hominids ancestral to the genus *Homo*) combined **apelike features** with **bipedal movement**. Australopithecine brain size was typically only slighter greater than the average for modern apes. As with *Ardipithecus ramidus*, fossil remains of hominids of this genus have been found only in Africa.

Gracile australopithecines: Characterized by smaller dentition and facial anatomy.

- Australopithecus anamensis
- Remains dating from 4.2–3.9 mya, found in East Africa, show similarities to Ardipithecus ramidus.
- Fossils indicate a bipedal species with apelike features but with thicker molar enamel typical of later hominids.
- · Australopithecus afarensis
 - Remains of this species, dating from 3.8-3.0 mya from East Africa, comprise the largest collection of fossils found for an australopithecine species. Remains of dozens of individuals have been found, along with 40% of a complete skeleton of a single individual who was named "Lucy."
 - Fossils indicate a species adapted to bipedal movement, with an apelike skull and brain size. At the Loetol Side in Tanzania, footprints preserved in mud indicate that a group of two to three hominids, likely members of this species, walked together in a fully bipedal fashion 3.6 mya.
 - Like later hominids, A. afarensis had massive back teeth and jaws for grinding and crushing, an adaptation for eating the coarse vegetation, seeds, and nuts prevalent in the East African savanna at the time. Fossils show a marked degree of sexual dimorphism—a sharp contrast in size or appearance between males and females.
- Australopithecus africanus: Fossil remains of this species, found in South Africa and dating from approximately 3-2 mya, resemble A. afarensis but have more human dentition, including broader incisors and small, short canine teeth.

Robust australopithecines: Characterized by larger dentition and facial anatomy relative to gracile australopithecines.

- Australopithecus aethiopicus: Known from sparse fossil remains dating from 2.7–2.3 mya from East Africa, including one designated as the "Black Skull." This species is very robust, with massive teeth and a pronounced sagittal crest, a ridge of bone along the top of the skull to accommodate large chewing muscles.
- Australopithecus robustus: Fossil remains dating from about 2–1 mya in South Africa resemble A. africanus with large teeth, massive jaws, and a sagittal crest.
- Australopithecus boisei: Fossil remains dating from about 2.3-1.2 mya in East Africa indicate a species with a jaw, molars, and sagittal crest larger and more massive than A. robustus; thus, A. boisei has been termed hyperrobust.

New finds

- Australopithecus garhi: A new species from East Africa, dating to about 2.5 mya; resembles A. afarensis with significantly larger molars.
- Australopithecus bahrelghazali: Found recently in Chad; dates to approximately 3 mya and exhibits only minor variance from A. afarensis in dentition. Fossil evidence for this species and A. garhi remains highly fragmentary, so additional information is needed to understand their ancestral relationships with other hominid species.
- Kenyanthropus playtops: Another new species that has been proposed based on a fossil skull that dates to 3.5 mya. However, many scholars believe that this specimen may be Australopithecus afarensis.

Australopithecine traits and behavior: Although australopithecine traits and social behavior remain uncertain, anthropologists have made inferences based on insight from the study of nonhuman primates.

- Tool use: It is unclear whether austalopithecines made and used tools. Because some living nonhuman primates modify materials to use as simple tools, anthropologists infer that australopithecines engaged in similar activities. Bones that may exhibit cut marks from stone tools have been found dating to 2.5 mya in association with fossils of Australopithecus gathi. but this evidence still remains the subject of debate.
- Communication: Australopithecines probably communicated through call systems similar to those possessed by living nonhuman primates
- Hunting: Like chimpanzees, australopithecines may have hunted for small game. However, the lack of widespread evidence for stone tool manufacture and hunting activities at australopithicine sites suggests that these species lacked the capacity for more complex elements of technology and social behavior characteristic of the genus Homo.

THE GENUS HOMO

Members of the genus **Homo** include modern humans and human ancestors following the divergence from the *Australopithecus* line. The early members of the genus coexisted in Africa with robust australopithecines until approximately 1 mya. Members of the genus are distinguished from australopithecines by substantially greater **cranial capacity**.

Homo habilis: Fossil remains of this species dating from approximately 2.4–1.8 mya from East Africa show a significantly larger brain than any of the australopithecines.

Homo rudolfensis: A species contemporaneous and highly similar to Homo habilis, but exhibiting larger molars, a broader face, and a less pronounced brow ridge—a thick ridge of bone over the eyes. Many paleoanthropologists argue that Homo rudolfensis represents variation within Homo habilis rather than a separate species.

Homo erectus: The first hominid species to expand out of Africa into the southern portions of Asia and Europe.

- Earliest fossil evidence for Homo erectus comes from Africa (approximately 1.8 mya), with specimens from Java that may be from roughly the same time. Recent fossils from the republic of Georgia have been dated to 1.7 mya. The fossil remains of the most complete Homo erectus specimen (1.6 mya) are known as the Nariokotome boy.
 Homo erectus was characterized by a significantly larger
- Homo erectus was characterized by a significantly larger brain than any previous hominid species—approximately twice as large as the brain of australopithecines and within
- the low end of the range for anatomically modern humans.

 Homo erectus had smaller molars and larger front teeth than earlier hominids, and a stronger skull to provide greater protection for the brain. Distinctive skull features include a massive brow ridge, a thick rounded ridge along the crest of the skull called a sogittal keel, and a ridge of bone called an occipital bun that attached to massive neck muscles.
- Some paleoanthropologists designate the earliest Homo erectus fossils in Africa as a separate species, Homo ergaster, but many researchers believe these early African specimens reflect merely regional variations within a single species.

Homo floresiensis: A very new find from the isolated island of Flores, Indonesia, dating from before 36,000 BCE to at least 16,000 BCE; found along with stone tools and remains of dwarf elephants and komodo dragons. This species, whose overall size and cranial capacity compare to the smallest australopithecines known from Africa, is presumably the result of dwarfing of an ancestral Homo erectus population due to isolation.

Homo sapiens: This species designation includes anatomically modern humans, known as *Homo sapiens sapiens*, and their most recent ancestors, referred to as archaic *Homo sapiens*. Cranial capacity is larger relative to *Homo erectus*, and the skull is more rounded to accommodate a larger brain.

- Archaic Homo sapiens: This designation refers to the earliest specimens assigned to the same species as modern humans, dating from 300,000–30,000 BCE in Africa. Asia. and Europe.
 - Fossil remains associated with this designation are transitional between Homo erectus and anatomically modern humans. They possess a heavy brow ridge and other cranial features characteristic of Homo erectus coupled with the large cranial capacity characteristic of Homo sapiens.
- Neanderthals: One group of archaic Homo sapiens, has alternatively been assigned a unique subspecies designated Homo sapiens neanderthalensis and a separate species known as Homo neanderthalensis.
 - Neanderthals were characterized by a stocky build, large jaws, distinct brow ridges, sloping faces, and a larger average brain size than modern humans.
- The fossil record indicates that Neanderthals existed in the Near East and Europe from approximately 130,000– 30,000 BCE and coexisted with anatomically modern humans for thousands of years.

Modern Homo sapiens: Designated Homo sapiens sapiens, this species includes all anatomically modern humans from 100,000 BCE to the present.

- The earliest anatomically modern human fossils have been recovered from sites in South Africa and the Near East. These fossils exhibit slender trunks and limbs, high and rounder brain cases, more pronounced forehead regions, and the marked chins characteristic of modern humans.
- Fossils of modern humans in Europe and southeast Asia date to around 40,000 BCE.

THEORIES OF MODERN HUMAN ORIGINS

Single-origin theory: Also called Eve theory or the mitochondrial Eve theory, this theory postulates that modern humans evolved in Africa and spread out to the other continents, replacing the Neanderthals and other archaic Homo sapiens.

- Evidence in support of this theory comes from mitochondrial DNA (mtDNA), which is passed on identically from mother to offspring unless a mutation occurs.
 Frequencies of mutations and degree of variation in
- Frequencies of mutations and degree of variation in mtDNA among living populations suggests that a common ancestor to all the world's humans lived in Africa around 200,000 BCE and spread elsewhere after 135,000 BCE. However, no fossils of modern Homo sapiens dating to this age have yet been recovered.

Multiregional theory: The alternative theory argues that *Homo erectus* evolved into modern *Homo sapiens* independently in Africa, Asia, and Europe.

- New traits spawned by mutations could have passed among the populations in the various areas through gene flow as a result of interpreeding.
- flow as a result of interbreeding.

 Advocates of this theory cite similarities within each continent between Homo erectus features and features of modern humans living within each continent. They also claim that the rate of mtDNA mutation may be much slower and that the common ancestor may have been a Homo erectus in Africa.

CONTINUED ON OTHER SIDE

HUMAN CULTURAL EVOLUTION

Over time, humans also have evolved **culturally**, developing new tools, technologies, systems, and practices. Archaeologists divide the timeframe of human cultural evolution into several different periods.

THE PALEOLITHIC PERIOD

The Paleolithic period, whose name derives from the Greek roots paleo ("old") and lithic ("stone"), lasted from approximately 2.5 mya—8000 BCE and traditionally is divided into Lower, Middle, and Upper periods. During the Paleolithic, several major traits of fully modern human culture emerged:

- Production of stone tools
- 2. Use of fire
- 3. First hunting of large mammals
- Advent of language, art, and other elements of culture that all modern humans possess

LOWER PALEOLITHIC

The Lower Paleolithic saw the first use of stone tools. Archaeologists commonly divide it into two different traditions, the Oldowan and the Acheulian.

Oldowan: The oldest stone tools date from about 2.5–1.6 mya and are associated with the **Oldowan** tradition (after Olduvai Gorge in Tanzania, where the tools were first found).

- Pebble choppers: Typical tools of this tradition consist of tennis ball–size stones from which two to four flakes were chipped off to form a sharp cutting edge.
 - Most archaeologists believe that these first stone tools were made by early members of the genus Homo, who had substantially larger brains than their predecessors.
- However, species of australopithecines coexisted in Africa during this period and may have engaged in some early stone tool production as well.
- Scavenging and hunting: Microscopic analysis of Oldowan tools exhibit polish characteristic of butchering animals.
 - Cut marks from the stone tools often overlap marks from carnivore teeth, providing evidence of the scavenging of the remains of animals killed by other predators.
- The degree to which early Homo scavenged or hunted is unclear, though these hominids probably at least hunted small game as living nonhuman primates do today.
- Home bases: Evidence of accumulations of debris at waterholes are believed to be the earliest hominid home bases—locations where hominids brought food to share with other members of the group at campsites.
- However, because predators also frequented the waterholes, these locations would have been dangerous for early hominids to stay for prolonged periods.
- Many archaeologists dispute the evidence for home bases during the Oldowan, arguing that these locations may simply indicate intensive scavenging activities.

Acheulian: The Acheulian tradition (after St. Acheul, France, where the tools were first found) dates from about 1.5 mya-200,000 BCE. Tools from the Acheulian are considered characteristic of *Homo erectus* and have been found in Africa, Europe, and southern portions of Asia.

- Hand axes: Typical Acheulian tools consist of stones from which many flakes were removed to form a symmetrical teardrop shape. Large choppers known as cleavers and smaller flake tools were also important in this period.
- Scovenging and hunting: Acheulian tools have been found in association with fossils of animals, including large species such as elephants. However, it is unclear whether this evidence represents scavenging or hunting activities.
 As in the Oldowan, scavenging in the Acheulian may
- As in the Oldowan, scavenging in the Acheulian ma have continued to be more prevalent than hunting.
 The earliest direct evidence of hunting consists of woode
- The earliest direct evidence of hunting consists of wooden spears found along with stone tools and the butchered remains of horses in Germany dating to 400,000 BCE.
- Home bases: Evidence for campsites has been found near water sources, in caves, and near plant foods and game animals. Also, specialized sites away from the home bases have been found: concentrations of butchery tools, as well as concentrations of tools near sources of the types of stone that were used for tool production.
- Fire: The earliest definitive evidence for controlled use of fire has been found at Acheulian sites in Europe that date to about 400,000–350,000 BCE.
 - Possible evidence for use of fire at earlier Acheulian sites, as early as 1.6 mya, are questionable and may stem from natural fires or use of natural fire by Homo erectus.
- The use of fire likely allowed Homo erectus to live in subtropical and temperate zones within Asia and Europe.

MIDDLE PALEOLITHIC

The Middle Paleolithic, known as the Middle Stone Age in Africa, is characterized by the Mousterian tradition in Europe and the Near East and by the Post-Acheulian in Africa. These traditions, dating from approximately 300,000–40,000 BCE, are characteristic of archaic Homo sapiens.

Mousterian: The Mousterian tradition (after Le Moustier, France, where the tools were first found in a rock shelter) brought greater variety and complexity of stone tools. At least 14 distinct tool types were used for a variety of tasks, including scraping animal hides, sawing, gouging, and piercing.

Levallois technique: This technique, a complex process

- of chipping standardized flakes from a specially prepared core, is characteristic of the Mousterian tradition. Similar technologies characterize the Post-Acheulian tradition.
- Hunting: Remains of small and large game animals, birds, fish, and shellfish have been found at Neanderthal sites in Europe and the Near East and archaic Homo sapiens sites in Africa. A wooden spear found in the ribcage of a mammoth dating to 70,000 BCE provides direct evidence for the hunting of large mammals during the period.
- Home bases: Most Mousterian sites are situated in caves or rock shelters, but many are also known in the open, near water. These sites may have been used as home bases or as semi-permanent base camps that groups returned to year after year.
 - Mousterian cave sites provide evidence for a heavier reliance on fire than during the Acheulian.
 - The earliest convincing evidence of shelter consists of houses found in the Ukraine, constructed of wood, framed with animal skins held down with mammoth bones, and enclosing several hearths.
- Burial: Burial and funerary rituals may have originated during the Mousterian. Pollen has been found in association with a Neanderthal burial in the Near East, suggesting that flowers may have been laid on the deceased (although the pollen also could have resulted from natural causes).

UPPER PALEOLITHIC

The Upper Paleolithic (called the Later Stone Age in Africa) began by 40,000 BCE and ended at different times in different regions. It is associated with anatomically modern humans and a number of innovations that suggest the emergence of modern human culture. Upper Paleolithic stone technology involved the construction of blades—long, narrow flakes chipped from specially prepared cores. The number of tool types increased dramatically, and tools were made not only from stone but also from bone, antler, and ivory.

- Hunting: Evidence indicates that humans engaged in cooperative hunting of large mammals, including some now-extinct megafauna (e.g., mammoths, woolly rhinoceroses), and smaller species such as reindeer.
- Stone, bone, and antler spear points, as well as the atl-atl (spearthrower), greatly increased hunting efficiency.
- Hafting, the practice of mounting stone tools on wooden handles, is also evident during the period.
- Home bases: The presence of large base camps, or aggregation sites, surrounded by numerous smaller campsites suggests that small groups congregated seasonally. More elaborate shelters were constructed during this time, such as mammoth-bone houses in the Ukraine from 13,000 BCE.
- Clothing: The earliest evidence of clothing consists of eyed ivory or bone sewing needles dating to 23,000 BCE, implying that clothes sown with thread wors worn.
- implying that clothes sewn with thread were worn.

 Long-distance acquisition: Materials for tools and art objects often were obtained from sources hundreds of miles away.
- **Origins of art:** The earliest symbolic objects and decoration are associated with modern *Homo sapiens* during this period in Africa, the Near East, and Europe. Even the earliest art exhibits a high degree of sophistication.
- Art was created in many forms, including cave paintings, stone slabs, sculptures, and personal ornaments fashioned from bone, antler, ivory, shell, animal teeth, and stone.
- Numerous sculptures of human females, often called Venus figurines, have been found.

 Several theories have been proposed for the meaning.
- of Upper Paleolithic art, focusing especially on the cave paintings found in Africa, Europe, and Australia originating from 28,000–26,000 BCE.
 - Hunting magic: Since cave paintings primarily depict animals, the paintings may have been intended to increase luck during the hunt.
- increase luck during the hunt.

 Fertility: Paintings may have been meant to increase
- animal and plant fertility.
 Rites of passage: Caves may have been used in initiation rites, such as the transformation from adolescence to adulthood.
- Trance states: Upper Paleolithic art often depicts entoptic phenomena (geometric forms seen when vision is affected by trance states or drugs), suggesting the art may have played a role in rituals involving trance.





- Origins of language: The timing of the origin of language remains unclear
 - Some archaeologists argue that the Levallois toolmaking technique was so complex it must have required some form of language to pass from one generation to the next.
 - Others argue that archaic Homo sapiens lacked the vocal tract anatomy necessary for fully modern speech.
 - Because human language requires a capacity for symbolic thought, some scholars argue that the emergence of symbolic art during the Upper Paleolithic laso implies the emergence of true language at this time. The lack of symbolic decoration in earlier periods suggests that earlier hominids may have used call systems or other advanced forms of communication but lacked language as known today.
- Expansion: Farther corners of the globe were settled during this period: Australia and New Guinea perhaps as early as 60,000 BCE, Northern Europe by 45,000 BCE, Japan by 40,000 BCE, and North and South America by at least 9500 BCE.
 - Peopling the New World: The earliest settlers in the New World crossed a land bridge, known as Beringia, formed between Siberia and Alaska during the last Ice Age due to lower sea levels.
- These settlers, the Paleoindians, are believed to have migrated into the southern parts of North America through an ice-free corridor that likely existed between two glacial ice sheets in the northern part of the continent.
- The timing of the initial migration is unclear. Some scholars argue that it was no earlier than 9,500 BCE; others argue it may have been as early as 40,000 BCE.

THE MESOLITHIC PERIOD

The period following the Upper Paleolithic, known as the Mesolithic in the Old World and the **Archaic** in the New World, began in different times in different regions.

- When the last Ice Age ended, many large mammal species (megafauna) became extinct, and humans shifted to a broad-spectrum economy. Subsistence was obtained from a wide array of small game, fish, birds, and plants, in addition to the large game hunted in the preceding period.
- The Mesolithic coincided with the advent of this broad-spectrum economy, which occurred around 13,000 BCE in the Near East and 8000 BCE in Europe. This new pattern of subsistence set the stage for the origins of food production.

ORIGINS OF FOOD PRODUCTION

Food production was a major step in human cultural evolution. It brought revolutionary change from the foraging (hunting and gathering of wild plants and animals) that all preceding humans and human ancestors had practiced for millions of years.

- Food production involves the modification, or domestication, of plants and animals by humans.
 - In a process known as **artificial selection**, humans choose to replant only those seeds and mate only those animals that have traits most beneficial for human consumption.
 - that have traits most beneficial for human consumption.

 Over time, domesticated species develop unique characteristics that distinguish them from their wild ancestors.
- Food production was invented independently in seven areas across the globe, marking the onset of the Neolithic period in each area. The advent of food production occurred at different times in different regions. In some areas of the world, the foraging way of life persisted until recent times.

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Region	First Domestication	Plants/Animals Domesticated	
Near East (Mesopotamia)	c. 8000 BCE	wheat, barley, rye, oats, lentils, peas, various fruits and nuts, dogs, sheep, goats, cattle, pigs, camels	
China	c. 6500 BCE	rice, water chestnuts, water buffalo, dogs, pigs (southern China); millet, dogs, pigs, chickens (northern China)	
Southeast Asia	c. 7000- 5000 BCE	rice, betel nut, betel leaf, water chestnut	
Andes	c. 6000 BCE	beans, quinoa, chiles, potatoes, dogs, llamas, alpacas, guinea pigs	
Central Mexico (Mesoamerica)	c. 5000 BCE	maize, beans, squash, dogs, turkeys	
Eastern North America	c. 2500 BCE	goosefoot, marsh elder, sun- flower, squash, dogs, turkeys	
Sub-Saharan Africa	c. 2000 BCE	sorghum, pearl millet, African rice, yams	

- Domestication increased the capacity for obtaining sustenance, spawning population growth and increasing sedentism, the habitation of permanent year-round communities. However, domestication has several drawbacks:
 - Foragers often obtain a more balanced diet with minimal effort compared to food producers. Heavy reliance on domesticated staples leads to dietary deficiencies.
- Decreased sanitation and close proximity of domesticated animal species associated with sedentism fosters the spread of communicable diseases.

Theories about the origins of food production: In some respects, the rise of food production brought a more labor-intensive, less healthy way of life than the foraging that dominated previously. Several theories about possible reasons for the shift center on **Mesopotamia**, the earliest center of food production.

HUMAN CULTURAL EVOLUTION (continued)

- Oasis theory: Argues that severe droughts forced humans, plants, and animals to congregate at oases in Mesopotamia. Because of the decreased availability of wild plants and animals humans began to cultivate and domesticate within oases. Subsequent research, however, has failed to provide evidence for the dramatic environmental changes that this theory proposes
- Nuclear zone hypothesis (readiness hypothesis): Argues that domestication began in nuclear zones like the hilly flanks in Mesopotamia (a woodland zone overlooking the Tigris and Euphrates rivers where wild grains grew abundantly). Contends that humans in these zones became highly familiar with local wild species and that culture evolved to the point that they were ready to begin domestication.
- Marginal zone hypothesis: Argues that domestication began in marginal zones (where wild grain did not grow naturally) after population pressure forced people into those zones. Glacial melting at the end of the last Ice Age caused rising sea levels and forced coastal peoples to migrate inland, and the nuclear zones' natural abundance fostered population growth. Humans living in marginal zones tried to recreate the nuclear zones' abundance through cultivation. Even after the onset of food production, however, domesticated species generally made up only a small proportion of the diet for hundreds or even thousands of years
- Population pressure model: Argues that food production emerged independently in several locations because hunting and gathering populations across the globe had expanded until they had exploited all the potential of naturally available foods. People then turned to domestication to feed the growing population.
- Social pressure model: Argues that domestication arose due to changes in social environment Immediately prior to domestication, groups around the world began to trade more extensively Evidence of artifacts and burial goods suggests that ways to mark status and ethnicity became more important. Domestication may have arisen as a way to generate surplus that could have been given as tribute to leaders in societies characterized by increasing status differentiation.

ORIGINS OF CIVILIZATION AND THE STATE

Anthropologists believe that food production paved the way for another major transformation in human cultural evolution; the origin of civilization and the state, defined as societies governed centralized and hierarchical political systems. A sedentary lifestyle and stable food supply led to population expansion, and the production of surplus allowed certain individuals within soci ety to pursue symbolic activities not related directly to subsistence.

Defining characteristics of civilization and the state:

- Centralized and hierarchical political organization
- 2. Control over a specific regional territory.
- Development of substantial populations within communities known as cities
- Development of social stratification, i.e., distinct social classes with varying opportunities for power, wealth, and success. The ruling class is comprised of religious, civil, or military leaders. **Division of labor** involving craft specialists who are not engaged in agricultural production.
- Monumental architecture, e.g., temples and palaces.

 Writing, i.e., a symbolic system of complex recordkeeping.

- Predictive **sciences**, e.g., mathematics, astronomy, metallurgy.

 Sophisticated style of **art** associated with symbolic offices (e.g., king, chief, priest) and the state. Long-distance trade networks.
- 11. Official state religion with full-time religious specialists

Six locations where civilization emerged independently:



Theories about the emergence of civilization and the state:

- Irrigation hypothesis: Argues that the key factor in the emergence of civilization was the advent of irrigation, for control of irrigation systems required management and control of large groupscontrol that was then transferred to a centralized ruling class. However, civilization did not emerge in all societies that had irrigation, and it did emerge in some areas that did not have irrigation.
- Circumscription hypothesis: Argues that civilization emerged as a result of population growth within areas bounded by geographical or political barriers—in other words, areas facing environmental or social circumscription. These territorial limitations led to competition and warfare and resulted in the development of centralized control to mobilize armies and control conguered groups. However, the territories of all early states were not necessarily circumscribed. and in some instances population was actually in decline at the advent of civilization.
- Trade: Argues that trade was the major factor in the emergence of civilization, as states emerged at key nodes along transportation routes to control production and redistribution of trade goods.
- Systems models: Emphasize how various systems—for organizing large populations, mobilizing armies, controlling production and exchange, adminstering information—are important in the development of social stratification and establishment of a ruling elite. These models argue that the interplay of these multiple systems is more important than any single cause proposed in earlier models.

Theories about the decline and collapse of civilizations:

- **Environmental degradation:** Argues that intensive agriculture can lead to the depletion of the environment and ultimate collapse of a civilization. Environmental disasters such as persistent drought, earthquakes, and volcanic eruptions may also contribute to collapse.
- Overextension: Argues that overextension of the territory controlled renders a state vulnerable to border attacks by barbarians, members of groups who live outside the state's control.
- Internal conflict: Argues that internal stress arising between social classes (as a result of social stratification) may lead to collapse.

THE STUDY OF HUMAN CULTURE

Anthropologists study all aspects of living and historic human culture from all societies across the globe. Cultural anthropologists study cultural similarities and differences and the ways in which aspects of culture change over time and in association with other cultural traits. They practice ethnography and ethnology, drawing on cross-cultural evidence to spot similarities and differences across cultures and develop theories about social and cultural systems.

LANGUAGE AND COMMUNICATION

Language is a complex verbal symbolic system and a distinguishing characteristic of all human cultures.

- Although the timing of the origins of language remains unclear, anthropologists agree that the capacity for language:

 1. Is shared by all modern humans
- 2. Is crucial to the transmission of culture
- 3. Distinguishes humans from the rest of the animal kingdom Nonhuman primates use call systems to communicate, and chimpanzees and gorillas may be taught sign language but have not invented systems of sign language independently. Language features the following elements:
 - Phoneme: The smallest unit of intelligible sound in a given
 - Morpheme: The smallest unit in a given language that
 - possesses meaning (i.e., usually a word) Lexicon: A list, such as a dictionary, of the meanings of all the morphemes in a given language
 - Syntax: The manner in which words are organized into hrases and sentences
 - Competence: The total knowledge and capacity to speak
 - and understand a language possessed by an individual.

 Performance: The use of speech within particular social
- Sapir-Whorf hypothesis: Argues that, just as culture influences language, language likewise influences culture. Edward Sapir and Benjamin Lee Whorf contend that different languages foster different ways of thinking about the world.
- Focal vocabularies: Sets of words that possess important distinctions to particular groups, such as the numerous words for different types of snow in the language of the Inuit, or Eskimos.
- **Sociolinguistics:** The study of language use as a reflection of social differences. Speech patterns vary among members of different ethnicities, classes, and genders within a society, and also vary at the individual level within different social settings.
- Historical linguistics: The study and attempted reconstruction of past languages from living languages and write ten records. Historical linguists hope to use knowledge of ancient languages to shed light on ancestral relationships and patterns of interaction between cultures.
- Cuneiform: The earliest system of writing, consisting of impressed marks in clay (Sumeria, c. 3400 BCE).

- Hieroglyphics: A system of writing typically recorded on papyrus (Egypt, c. 3100 BCE)
- Kinesics: The study of nonverbal communication Kinesics examines the transfer of information through body motion, stance, facial expression, and gesture.

ECONOMIC SYSTEMS

When anthropologists study economic systems, they consider the varying ways in which human groups interact directly with their environment and circulate the symbolic and material resources necessary to maintain their way of life

Subsistence strategies: Scholars have identified four main subsistence strategies for nonindustrial human groups, one involving the collection of wild food resources and the other three involving forms of food production. Subsistence within industrial societies differs (see The Modern World System, next page).

- 1. Foraging (hunting and gathering): Subsistence from collecting wild plants and animals. All past humans and human ancestors obtained subsistence exclusively from foraging for millions of years before the advent of food production (c. 8000 BCE).
- 2. Horticulture: Cultivation of a wide variety of crops with simple tools and techniques in small, temporary gardens. Horticulturalists may use slash and burn techniques, clearing and subsequently burning portions of forest in order to replenish nutrients in the soil
- Agriculture (intensive agriculture): Intensive cultivation of a few staple crops in permanent fields, using labor-intensive techniques such as irrigation and terracing.
- Pastoralism: Subsistence primarily from tending herds of domesticated animals. Subsistence is supplemented by foraging, some cultivating, or trading with cultivating groups

Anthropologists study economic systems through the tradition al divisions of production, distribution, and consumption:

- **Production:** The **mode of production** is the manner in which production is organized to meet the need for subsistence and other material goods. Anthropologists distinguish two primary modes of production:
- · Kin-based: Mode of production in which family and kin groups are the primary means of organizing labor and production
- Industrialized: Mode of production involving mechanized agriculture and production in factories
- Distribution: Also known as exchange, distribution involves the way in which produced goods are circulated or allocated among members of a group. Anthropologists distinguish three primary systems of exchange:
 - Reciprocity: Exchange without the use of money.
 - Generalized reciprocity: Exchange of gifts.
 - Balanced reciprocity: Barter or exchange of goods of egual value

- . Redistribution: Accumulation of goods by a leader or centralized institution, often in a chiefdom, and subsequent distribution to the members of the group.
- Market exchange (commercial exchange): A profitmotivated system in which the value of goods is subject to supply and demand.
- Consumption: Acquisition of goods and services to obtain subsistence and meet other needs and desires.

POLITICAL SYSTEMS

Anthropological study of political systems has revealed great variation in the ways societies organize themselves. Early anthropologists identified four elementary forms of social and political organization. Anthropologists today, however, do not think that societies necessarily belong exclusively to one type of organization, or that societies necessarily evolve from one form to another. Societies exist along continuums ranging from small to large, from autonomous to centralized or hierarchically controlled syste

- 1. Band: A small, mobile, autonomous, group that is kin-based (all members are related through descent or marriage)
- Bands are characteristic of human groups who obtain subsistence through foraging.
- Leaders of bands generally have little authority and rule by persuasion rather than coercion.
- Bands are primarily eaglitarian, possessing status differentiation based solely on age and gender.
- . Tribe: The integration of descent groups, kin-based groups sharing descent from a common ancestor, into a large nization. A tribal society may also encompass sodalities, non-kin-based groups such as age set groups, secret societies, and military societies.
- Members of tribes typically engage in non-intensive food production, such as horticulture or pastoralism
- As in bands, tribal leaders, known as headmen or village heads, have little authority and rule mainly by persuasion.
- Some tribal societies have leaders known as "big men" and "big women" who have authority over several villages and, unlike other tribal leaders, amass greater wealth than other members of society.
- Chiefdom: A political group that integrates multiple communities under the control of a single individual, a chief. A chiefdom is transitional between a tribe and a state: communities within a chiefdom are kin-based as in tribes, but the society is characterized by social stratification as in state-level societies
- Most chiefdoms practice intensive horticulture or agriculture, though pastoral chiefdoms are known as well
- The economic system of chiefdoms is characterized by redistribution (see Economic Systems, above left).
- State: A society governed by a centralized, hierarchical political system. States are characterized by intensive agriculture and by the control of surplus agricultural production by a ruling elite.

KINSHIP AND DESCEN

Kinship organizes the typical social unit in bands, tribes, and chiefdoms and has profound influence on other aspects of culture in these societies. Like race, kinship is a cultural construc tion, and not all biological relatives are necessarily recognized

Rules of descent: Societies have different ways of recognizing which biological relatives and ancestors are considered kin.

- Unilineal: Tracing descent through a single sex
 - Patrilineal: Tracing descent through the male sex only. Offspring belong exclusively to the kin group of the father
- Matrilineal: Tracing descent through the female sex only. Offspring belong exclusively to the kin group of the mother
- Ambilineal: Tracing descent through either the male or female sex (a choice made by the members of the group).
- Bilateral: Tracing ancestry through the lines of both sexes

Patrilineal descent group (members of the kin group are in gre

Matrilineal descent group (members of the kin group are in green)





Families: Societies possess different types of families, or house hold groups, that form the typical units of social organization. · Nuclear family: Consists solely of the mother, father, and

- offspring. The nuclear family is prevalent within foraging hands and industrial societies
- Extended family: Consists of all related kin spanning two or three generations.
- Descent group: Consists of all individuals sharing descent from a common ancestor.
- Lineage: A descent group that traces ancestry to an apical ancestor, a shared common ancestor related through known links.
- Clan: A descent group that traces ancestry through pre sumed links to an apical ancestor known as a **totem**, which may be an animal or plant associated with the clan

Anthropologists have identified several patterns of marital res idence with proximity to different kin. Some examples are:

- Patrilocal: Residence with or near the husband's family. Matrilocal: Residence with or near the wife's family
- Bilocal: Residence with or near either the husband's family
- or the wife's family Avunculocal: Residence with or near the husband's mater
- Neolocal: Residence apart from kin of both spouses.

Kinship terminology varies across cultures and is a reflection of the importance placed upon different types of kin. For example, some cultures use a single term, "cousin," to refer to all offspring of both parents' siblings. Other cultures have terms that distinguish different types of cousins (depending on the sex of the offspring and parents' siblings), indicating the differing importance of different cousins in these societies

Although marriage is a cultural universal found within all societies throughout the globe, specific types of marriage vary greatly. Marriage is defined in a general sense as a sexual and economic union approved by society.

Incest: Sexual relations or marriage with a close relative. Incest is taboo or forbidden in all human cultures. Though some societies allow marriage to more distant relatives, all forbid marriage to other members within a nuclear family. Several theories attempt to explain this universal taboo.

- Biological abnormalities: Our human ancestors may have observed the abnormal offspring produced through incest
- Inbreeding avoidance: Humans may have evolved an instinctual tendency for avoidance as a result of the decreased fitness associated with breeding with close kin.

 Childhood familiarity: Children who are raised together
- may develop a natural aversion toward marrying or mating with each other.
- Family disruption: Marriage within the family has the potential to cause competition and rivalry and erode the function of the family as a social unit.
- Marital alliance theory: Marriage outside a kin group fosters alliances between groups and increases the opportunities for survival and success.

Forms of marriage: Marriage takes different forms according to different rules within various human cultures

- Exogamy: People from different groups intermarry
- Endogamy: People within the same group marry.
- Polygamy: A person marries multiple spouses.
- Polygyny: A single man marries multiple women
- Polyandry: A single woman marries multiple men
- Sororate: A widower marries a sister of his deceased wife Levirate: A widow marries a brother of her deceased husband.

Marital exchange: Most societies feature some type of marital exchange—an exchange of wealth between families being joined by marriage

- Bridewealth: Wealth that the family of the man pays to the family of the woman
- Bride service: Work or service that the man is required to give to the woman's family for a specified duration.
- **Dowry:** Wealth that the family of the woman pays to the family of the man.

Anthropologists view gender, like race and kinship, as a cultural construction. Whereas sex is biologically based (related to demonstrable biological differences between males and females), gender consists of specific traits that society ascribes to males and females—traits that do not derive from biological differences between the sexes

- Gender roles: Tasks that a particular culture assigns to males and females.
- Gender stereotypes: Oversimplified beliefs about the traits of males and females
- Gender stratification: Social stratification in which opportunities for power, wealth, and success are differentiated on the basis of culturally assigned gender. The degree of gender stratification varies among cultures.
- Patriarchal: A male-dominated political system in which women possess inferior status. Societies under this system are characterized by increased gender stratification.
- Matrifocal: Focus is upon the mother, in which the husband-father may be absent from the household. Societies under this system are characterized by decreased gen der stratification

RELIGIO

Religion, defined as beliefs and rituals concerning supernatural beings and powers, is a cultural universal. The origins of religion may date to the Middle Paleolithic, during which the first intentional human burials suggest a conception of an afterlife and the supernatural (see Middle Paleolithic, two pages previous).

Origins and functions of religion: Many theories have been proposed to explain the origins of religion and the functions and effects of religious behavior.

- Animism: Argues that the experience of images in dreams and trance led early humans to believe in the dual existence of a physical body and supernatural soul.
- Anxiety control: Argues that religion may function to lessen anxiety and alleviate doubt arising from circumstances beyond control through natural means.
- Social solidarity: Suggests that religion emerged as a result of life in groups to provide individuals in a society with a sense of community.

Types of religions: One prominent scholar has proposed four types of religions, each associated with different subsistence strategies and forms of political organization

- Shamanistic: Primarily characteristic of foraging bands; involves shamans, part-time religious figures who mediate with the supernatural on behalf of humans
- Communal: Primarily associated with farming societies: features shamans and community rituals (e.g., harvest ceremonies) and often is polytheistic, with several deities.
- Olympian: Characteristic of states: features full-time religious specialists known as priests or priestesses. The term derives from Mt. Olympus, the home of ancient Greek gods and god desses. Like communal religions, may be polytheistic
- Monotheistic: Also characteristic of some states; features priests or priestesses and maintains belief in a single all knowing, all powerful, supreme supernatural being.

Key terms in the anthropological study of religion:

- Ritual: Patterned, standardized behavior performed as social acts pertaining to the supernatural realm
- Magic: Performance of certain rituals to obtain supernatural assistance
- Rite of passage: Ritual that marks a transition from one stage of the life cycle to another.
- Secular ritual: Patterned, standardized behavior and rites of passage conducted in nonreligious settings and not pertaining to the supernatural.
- Mana: A supernatural force believed to exist within certain people, animals, plants, or objects.
- Taboo: People, animals, plants, and objects believed to cause supernatural harm if touched (see Incest, above left).
- Worldview: The system of beliefs regarding the natural and supernatural and the manner of perceiving and interpreting the world characteristic of a particular culture.

In many societies, art is an integral part of rituals, ceremonies, and other aspects of culture and does not exist as a separate entity in itself.

- The earliest art objects and decoration were created with a high degree of sophistication in a variety of forms during the Upper Paleolithic, suggesting that art is a universal characteristic of human cultures in the past and present.
- Anthropologists suggest broad definitions of art to account for variation across cultures, emphasizing that art expresses and communicates, evokes emotions and ideas, and is created in culturally patterned manners and styles.
- Art is expressed through numerous media, including painting, sculpture, body ornamentation and decoration, music, dance, storytelling, and literature, among others.
- Anthropologists study art through a cross-cultural lens Ethnomusicology, for instance, is the comparative study of music as an element of culture and society throughout the world.

PARKCHARTS

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ANTHROPOLOGY OF THE MODERN WORLD

Anthropologists have increasingly used anthropological theory and methods to study issues concerning the modern industrial world

THE MODERN WORLD SYSTEM

The **modern world system** consists of a global web of interdependency among all nations, societies, and cultures generated by modern industrial capitalism.

- Industrialism: The mechanization of agricultural production and manufacturing. Industrialism rose in the 18th century and greatly increased agricultural and manufacturing output
- Globalization: The social, political, economic, and cultural effects of industrialization, mass media, and modern transportation systems on societies throughout the world
- Popular culture: A cultural fabric that members of modern industrial nation-states share. often in lieu of ties of kinship, a belief in common descent, or a strong unifying state organization or official state religion, which many of these modern nation-states lack Anthropologists have devoted increasing attention to the cultural significance of pop culture, studying issues as varied as football, *Star Trek*, and vacations to Walt Disney World.

APPLIED ANTHROPOLOGY

Applied anthropology is the use of the knowledge and techniques from the four subfields of anthropology in non-academic settings to achieve practical goals. Each of the subfields of anthropology can be applied in different ways

- Biological anthropology can be applied via forensic anthropology, which involves the identification of the victims of accidents and crimes. Medical anthropology studies the social and cultural context of disease and illness
- Archaeology often is applied toward the goal of cultural resource management, the evaluation of the effects of construction projects on archaeological sites and the recovery of significant information from sites prior to their destruction.
- Cultural anthropology often is used by development and planning agencies to identify local social conditions and problems and use anthropological theory, methods, and perspectives to develop solutions. Also, many private companies and corporations use ethnographic observation methods to identify internal problems and apply an anthropological cross-cul-
- tural perspective and understanding of cultural diversity to facilitate business abroad. **Linguistic anthropology** is often applied to the study of the effects of dialect differences and sociolinguistic variation in society and within educational settings.