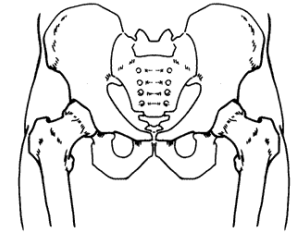


Acetabulum: the socket of the hip joint; an articular surface that encompasses the head of the femur.

Adaptation: an anatomical structure, physiological process or behavioral trait of an organism that has evolved over a period of time by the process of natural selection. Adaptations increase the long-term reproductive success of the organism.



Acheulean: a tool culture first associated with Homo ergaster/Homo erectus; characterized by bifacially-flaked handaxes.

Arboreal: refers to activity in trees.

Arboreal Quadrupedalism: a mode of locomotion in which the animal moves along horizontal branches with a regular gait pattern involving all four limbs.

Australopithecines: genus Australopithecus; a form of extinct hominin ancestral to humans. Fossil australopithecines show evidence of bipedalism, but generally retain relatively small brains and stature.

Bicondylar angle: the angle at which the shaft of the femur sits relative to the perpendicular midline of the body.

Bipedal: refers to locomotion (walking, running, standing) on two legs. Organisms can be habitual bipeds, meaning that it is their primary form of movement, or facultative bipeds, meaning that they only move on two legs occasionally.

Brow Ridge: the ridge of bones above the eye orbits; also known as the supraorbital torus.

Chromosome: a large molecule found in cells that contains DNA. Humans have 46 chromosomes (44 autosomal and 2 sexual), but different species have different chromosomal numbers.

Condyle: an articular prominence of a bone.

Conspecifics: organisms belonging to the same species.

Cranial: refers to the skull and mandible.

Diploidy: the state of cells containing two copies of each chromosome. Humans are diploids.

Distal: a relative term referring to the part of a limb that is further from the attachment point to the rest of the skeleton. The opposite of distal is proximal. The hand is distal relative to the elbow.

DNA: deoxyribonucleic acid; a long polymer or nucleotides (adenine, cytosine, guanine, thymine) that contains the genetic code for the formation of molecules necessary for cellular function.

Dorsal: the aspect of the body towards the back. Dorsal is the opposite of ventral. In humans the synonym "posterior" is often used.

Evolution: the process by which organisms acquire and pass on novel traits from generation to generation.

Fitness (Darwinian): the ability to survive and reproduce in a particular environment.

Fitness (Inclusive): a cumulative measurement of the ability for an individual and that individual's relatives to survive and reproduce in a particular environment. The fitness of relatives is important because related organisms share a certain percentage of their genome.

Fossil: formed when hard elements of a skeleton, such as shells, teeth, and bones, are quickly buried by sand or mud. These sediments are turned into rock over millions and during this time the organic components of the skeleton are replaced with minerals. This transition from bone to stone forms a fossil.

Gene Flow: the transfer of genes from one population to another. This ensures genetic diversity.

Genetic Drift: the statistical drift of allele frequencies in a population caused by random sampling effects in the formation of successive generations. Examples of genetic drift are the "founder's effect" and population bottlenecks.

Genome: all the hereditary information of an organism that is encoded in DNA.

Gracile: characterized as being small bodied and/or having slender and lightly-constructed anatomy.

Hadar: an African paleontological and archaeological site located in the Afar triangle region of Ethiopia. This site became famous when Donald Johanson, Yves Coppens, and Tim White discovered "Lucy" (*Australopithecus afarensis*) there in 1974.

Hominid: Hominidae; the Linnaean family that includes all the great apes (humans, chimpanzees, gorillas and orangutans).

Hominin: Hominini; the Linnaean tribe that includes humans and their extinct ancestors.

Humerofermoral ratio: the length of the humerus divided by the length of the femur; gives the length of the arms in proportion to the legs.

Iliac ala: the "wing" of the ilium; a large fan-shaped structure making up the lateral portion of the ilium. [Plural: Iliac alae]

Ilium: the bone that fuses into the os coxa, forming the hip. The anterior component to the acetabulum. [Plural: Iliia]

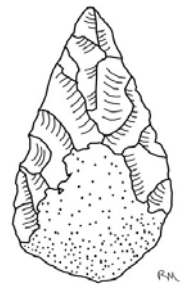
Inferior: refers to structures further away from the head.

Ischium: the bone that fuses into the os coxa to form the dorsal and inferior component of the acetabulum. [Plural: ischia]

Lateral: refers to a structure that lies further from the midline. The opposite of lateral is medial. The small toe is lateral to the large toe.

Lithic: refers to stone tools and implements

Lucy: a specimen of *Australopithecus afarensis* discovered in 1974 at Hadar by Donald Johanson, Yves Coppens, and Tim White. Specimen number AL 288-1. The story told is that this specimen, thought to be a female, was nicknamed after the Beatles' song "Lucy in the Sky with Diamonds."



Lumbar curvature: the anteriorly convex curvature of the spine in the region of the lumbar vertebrae.

Medial: refers to a structure that lies closer to the midline. The opposite of medial is lateral. The large toe is medial to the small toe.

Miocene: the epoch of geologic time from 23 to 5.3 million years ago.

Migration: the movement of individuals from a current population to another population or area; also refers to the movement of an organism from one biome to another.

Mousterian: a tool culture associated with *Homo neanderthalensis*; characterized by bifacially-flaked handaxes and flake tools made with the Levallois prepared-core technique.

Mutation: occurs when changes are made to the genetic material. This can occur due to a copying error or by exposure to radiation, chemicals, or viruses. Mutation is typically random.

Natural Selection: the process by which organisms with favorable, heritable traits survive and reproduce to pass those traits on to more offspring than do other organisms of the same species. Producing more offspring than conspecifics (other organisms of the same species) is known as "differential reproduction."

Neanderthals: *Homo neanderthalensis*; an extinct species of hominin that existed in Europe and western Asia from 230,000 to 30,000 years ago. Neanderthal stature and brain size were comparable with modern humans, but certain features of their anatomy, such as large noses and a robust skeleton, may have been adaptations to Ice Age climates.



Oldowan: a tool culture associated with *Homo habilis* and characterized by roughly flaked stone cobbles known as “choppers.”

Olduvai: an African paleontological and archaeological site located in northern Tanzania in the Great Rift Valley. This site is well known for the work done by Louis Leaky starting in the 1950s and continued by his family. Olduvai has produced fossils of hominins such as *Australopithecus bosei* and *Homo habilis*.

Organism: a functional unit of animal or plant life

Os coxae: the hip bone, also called the pelvis, formed of two halves. Each half, also called an os coxa (singular) or innominate, is formed by the fusion of three bones: ilium, ischium, and pubis.

Phalangeal shaft curvature: the observed curve in the shaft of a phalanx (finger bone).

Pleistocene: the epoch of geologic time from 1.8 million to about 10,000 years ago.

Pliocene: the epoch of geologic time from 5.3 to 1.8 million years ago.

Primates: an order of mammals composed of prosimians (lemurs, lorises, and galagos), monkeys, apes, and humans. Traits shared by primates include grasping hands and feet; a postorbital bar, which is a ridge of bone lateral to the orbit; convergent, or forward-facing eyes; and fingernails instead of claws.

Proximal: relative term referring to the part of a limb that is closer to the attachment point to the rest of the skeleton. The opposite of proximal is distal. The elbow is proximal relative to the hand.

Population: a group of organisms of a single species living in a particular geographical area. The organisms living within a population are more likely to breed with members of their own population than they are with members of other populations.

Postcranial: refers to the body below the cranium (skull and mandible).

Pubis: the bone that fuses into the os coxa and forms the ventral and inferior component of the acetabulum. [Plural: Pubes]

Replication: the process by which a copy of a double-stranded DNA strand is made.

Robust: characterized as being large bodied and/or having heavily-structured anatomy

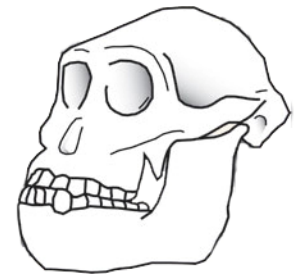
Sacrum: formed by the fusion of five sacral vertebrae; the part of the vertebral column that forms the most dorsal part of the pelvic girdle, in between the os coxae.

Skeleton: the protective and supportive structure of an organism constructed of bone and cartilage.

Species: the basic unit of biodiversity. Individuals of a species are reproductively isolated, meaning that they cannot produce viable offspring with a mate of a different species. In scientific classification (sometimes called Linnaean classification or nomenclature), species are listed by a capitalized genus name (i.e. *Homo* for humans) and a specific epithet (i.e. *sapiens* for humans). Therefore, the proper species name for humans is *Homo sapiens*.

Superior: refers to structures closer to the head.

Suspensory behavior : locomotor and postural habits characterized by hanging or suspension of the body below or among branches rather than walking, running, or sitting on top of branches.



Taung Child: the first fossil of genus *Australopithecus* and species *A. africanus*; recovered by Raymond Dart in 1924 from rocks produced by a local limestone quarry.

Thoracic Vertebrae: the section of the vertebral column where the ribs attach. Modern humans have twelve thoracic vertebrae.

Transcription: the process by which a complementary strand of RNA is made from a strand of DNA.

Translation: the process by which amino acids are constructed from the nucleotide sequence on a RNA strand.

Valgus knee: the angulation of the femur such that the knees are closer together than the hip joints.

Ventral: refers to the part of the body that is towards the belly. Ventral is the opposite of dorsal. In humans, the synonym "anterior" is often used. For hand palmar, and for foot plantar are synonyms for ventral.

Zhoukoudian : a paleontological and archaeological site located near Beijing, China consisting of a cave system; nicknamed "Dragon Bone Hill" for the numerous fossils produced. This site is well known for the excavations in the 1920s by Gunnar Andersson, Davidson Black, C.C. Young and Wenzhong Pei, which produced "Peking Man" (*Homo erectus*).