

Cultural Connection I: *The Hunters of the Savanna*

The Stone Age—circa 5,000,000–3000 BCE

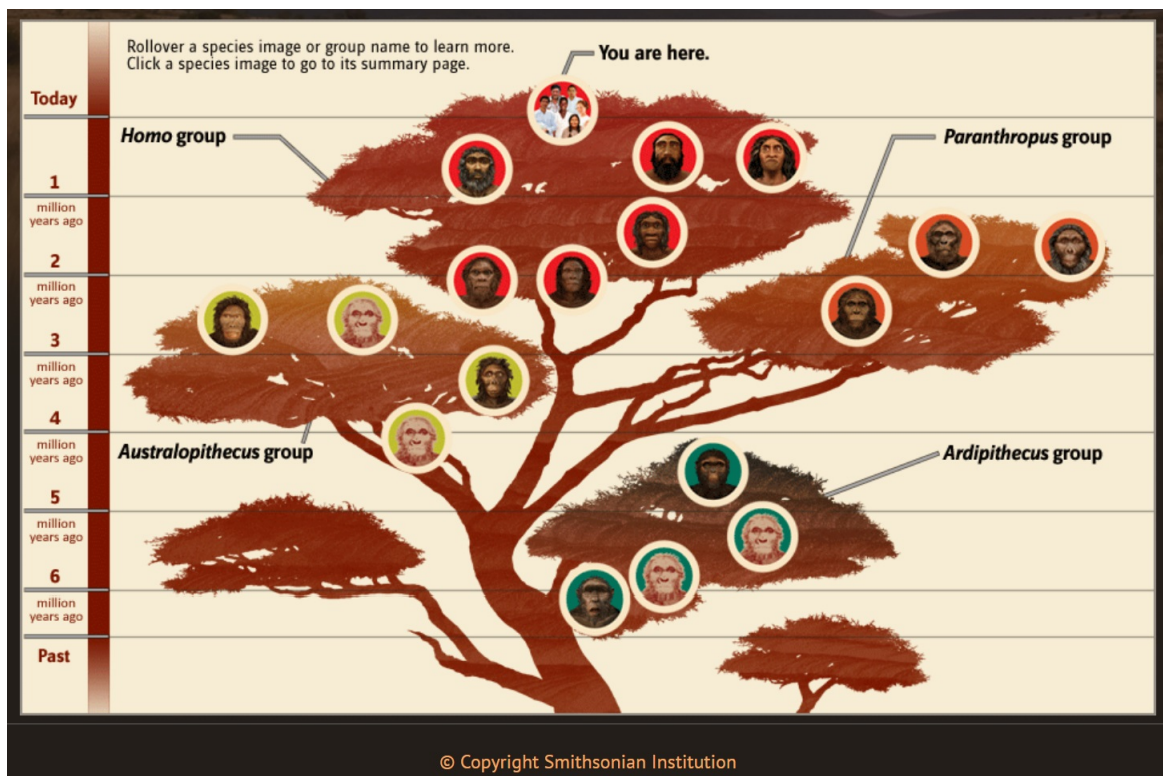
Note CCI.A. Our very ancient ancient ancestors were apelike and evolved in Africa. The study of human evolution is called *paleoanthology*. Eves states that the “Stone Age” perhaps began 5 million years ago (or “5 mya”) with use of crude stone choppers and cutting flakes with the genus *Australopithecus* (by “Stone Age” is meant the period of time in which stone tools were used). If you compare older versus newer works on human evolution, you may find a large variation in dates and species discussed (and their relationships, one to another). Eves date needs revision. The oldest known stone tool use (today) is 3.4 million years ago, and was by *Australopithecus afarensis* (the species of which the 3.2 million year old “Lucy” was a member). The evidence is fossilized animal bones with tool marks found in Ethiopia; see the [Natural History Museum article on “Oldest Tool Use” from web.archive.org](#). *Australopithecus afarensis* lived between 3.9 and 2.9 mya.



Image of “Lucy” from [CNN webpage “How a 3.2-million-year-old human relative named Lucy walked”](#).

The oldest known species of *Australopithecus* is *A. anamensis* which lived from 4.2 to 3.8 mya. Another species is *A. africanus* (3.3 to 2.1 mya), and a few other species are proposed, some based on a small number of finds. See the [Wikipedia webpage on *Australopithecus*](#). *Australopithecines* females were about three-and-a-half feet tall, and the males were almost five feet tall. They stood upright and could walk as efficiently as we can (according to a study of Lucy; see the [CNN webpage](#) containing the image above). Another source on the *Australopithecus* genus is the [Smithsonian National Museum of Natural History website on *Australopithecus afarensis*](#). The websites of this note were accessed 8/3/2023.

Note CCI.B. A nice interactive evolutionary tree of hominids (excluding the great apes, which are part of the family *Hominidae*) is on the [Smithsonian National Museum of Natural History website on the human family tree](#).



Notice that the *Ardipithecus* group predates the *Australopithecus* group. The *Ardipithecus* group is the oldest known humans and are our closest link to the other primates. It includes *Ardipithecus ramidus* which lived 4.4 mya, was about four feet tall, and seems to have a skeletal structure with adaptations to both tree-climbing and bipedality. *Ardipithecus kadabba* lived about 5.8 to 5.2 mya, was bipedal, and about the size of a chimpanzee. *Sahelanthropus tchadensis* is one of the oldest known species in the human family tree, living sometime between 7 and 6 mya. It had a brain slightly smaller than a chimpanzee's and it walked upright. The information of this note is based on the Smithsonian webpages with links in the human family tree website (all accessed 8/3/2023).

Note CCI.C. The *Paranthropus* group was around from 2.9 to 1.2 mya. It was previously known as the “robust *australopithecines*,” and there is still some controversy about this new classification. They had robust skulls, with a gorilla-like sagittal crest along the midline. They were bipedal, averaged about four feet tall, and weighed 75 to 100 pounds (see the [Wikipedia webpage on Paranthropus](#) (accessed 8/3/2023)). There are three species (currently) recognized in this group. *Paranthropus aethiopicus* lived from 2.7 to 2.3 mya (few specimens of this species are known). *Paranthropus boisei* lived from 2.3 to 1.2 mya. *Paranthropus robustus* (formerly *Australopithecus robustus*) lived from 1.8 to 1.2 mya. They were between three and four feet tall and weighed 90 to 120 pounds (with the females smaller than the males). The *Paranthropus* group lived in in eastern Africa.

Note CCI.D. Our genus is *Homo*. The Smithsonian human family tree gives six species in the *Homo* group. The earliest member of the group is *Homo habilis* (or “handy man”) lived from 2.4 to 1.4 mya, meaning that they overlapped with some members of *Paranthropus* group. They were three-and-a-half to four-and-a-half feet tall and weighed around 70 pounds. Fossilized specimens were found with thousands of stone tools at the Olduvai Gorge site in Tanzania, and that’s where the nickname “handy man” comes from (at the time of discovery in the 1960s, these were thought to be the oldest tool users). *Homo erectus* lived from 1.89 mya to 110,000 years ago. They were five to six feet tall and weighed between 90 and 150 pounds. Unlike earlier species, they had longer legs and shorter arms as compared to the size of their torso. Between the 1890s and 1920s, several examples of *Homo erectus* were found in Java and China (at the time, called “Java Man” and “Peking Man”). This makes them the first known *Homo* species to migrate out of Africa. *Homo neanderthalensis* lived from 400,000 to 40,000 years ago. Neanderthals were five to five-and-a-half feet tall and weighed 120 to 150 pounds. They are our closest extinct relatives. They were shorter and stockier than us, reflecting their adaptation to living in cold environments. They are known to have inhabited several parts of Europe and the middle east. They were the first early humans to wear clothing which they made by stitching together animal hides. They buried their dead, sometimes putting up markers and offerings such as flowers. They used fire, lived in shelters, and made symbolic or ornamental objects (making them unique, except for our species). Genetic studies reveal that Neanderthals and early modern humans interbred, and Neanderthal DNA exists today at a level of 1 to 2 percent in people of European or Asian background ([MelinePlus.gov website on](#)

“What does it mean to have Neanderthal or Denisovan DNA?”, accessed 8/3/2023). Most of the information of this note (and images below) is from the Smithsonian *National Museum of Natural History* websites on *Homo habilis*, *Homo erectus*, and *Homo neanderthalensis* (all accessed 8/3/2023).



Left to right, *Homo habilis*, *Homo erectus*, and *Homo neanderthalensis*.

Note CCI.E. The species *Homo sapiens* has been around for about 300,000 years. *Homo sapiens* evolved in Africa (most likely from *Homo heidelbergensis*, the common ancestor we share with Neanderthals). As compared to earlier human species, *Homo sapiens* are of a lighter frame (including smaller jaws and teeth), have larger brains, and a high vaulted skull with a near-vertical forehead which lacks heavy brow ridges. They, like their predecessors, spent large parts of each day gathering plants and hunting or scavenging animals (that is, they were hunter/gatherers). They used specialized tools of stone, bone, and (presumably) wood. They migrated out of Africa between 70,000 and 50,000 years ago, reaching Australia around 60,000 years ago and the Americas around 30,000 years ago. The time from the first emergence of *Homo sapiens* (300,000 years ago) to around 50,000 years ago (and the emergence of “behavioral modernity” (including abstract thinking, language, cre-

ation of art and music, and early forms of religion) is called the *Middle Paleolithic* (the *Lower Paleolithic* runs from about 3.3 mya to 300,000 years ago, cover the time of stone tool use by those before *H. sapiens*). The *Upper Paleolithic* runs from 50,000 years ago to 12,000 years ago. The beginnings of agriculture and the rise of the first civilizations started around 12,000 years ago. The Upper Paleolithic is the time of many of the cave paintings (two of the best known examples are in France: the Chauvet Cave, which is at least 30,000 years old, the Lascaux, which is 15,000 years old) and, as we'll see in [Section 1.1. Primitive Counting](#), the time of some of the earliest indications of the beginnings of mathematics (in the form of tallying). This note is based on the [Smithsonian National Museum of Natural History website on *Homo sapiens*](#) and the [Wikipedia webpage on "Early Modern Human"](#) (accessed 8/3/2023).

Note. In Note CC.I.E, we gave the three divisions of the "Old Stone Age", which covers 300,000 year ago to 12,000 years ago): Lower Paleolithic, Middle Paleolithic, and Upper Paleolithic. This is followed by the "New Stone Age," or *Neolithic*, which covers 12,000 to 6,500 years ago. This started with the "Neolithic Revolution" which involved a shift from hunter/gatherer lifestyles to a settled lifestyle involving farming and the domestication of animals. It ended with the beginning of metallurgy and the Copper Age (though the dates of these advances varied from place to place).

Note. To conclude “Cultural Connection I,” we turn to Eves for a description of the transition from hunter/gatherer to farmer (see page 7):

“Because Stone Age [i.e., Paleolithic] people were hunters rather than farmers, they had to move with the seasons. . . They were able to carry along with them only small, easily transported tools, clothing, and personal items. . . . Stone Age people did not develop metal tools or a written language. There were no cities. . . [To be sure,] Stone Age people traded with one another, and they needed to keep track of each family’s share of the hunt; both activities required the necessity of counting, a prelude to scientific thinking. Some Stone Age people, like the Sioux Indians [i.e., Sioux native Americans], had pictographic calendars that recorded several decades of history. Anything beyond the most primitive counting systems, however, had to wait until the development of full-scale, intensive agriculture, which required more sophisticated arithmetic.”

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