

Human Evolution

Information from Jared Diamond's *Guns, Germs, and Steel* (New York: W.W. Norton, 1999), 36.

1. Our closest living relatives are three surviving species of great ape:
 - a. the gorilla
 - b. the common chimpanzee,
 - c. and the pygmy chimpanzee (also known as bonobo)
2. The fact that these three species are all confined to Africa, along with modern fossil evidence suggests that the earliest stages of human evolution took place in Africa.
3. Human history, as something separate from the history of animals, began in Africa about 7 million years ago (estimates range from 5 to 9 million years ago).
4. At that time, a population of African apes broke up into several populations, of which one proceeded to evolve in modern gorillas, a second into the two modern chimps, and the third into humans.
5. Fossils indicate that the evolutionary line leading to us had achieved a substantially upright posture by around 4 million years ago, then began to increase in body size and in relative brain size around 2.5 million years ago.
6. The protohumans (or hominids) that led to modern humans are called:

a. <i>Australopithecus africanus</i>	3.5 mya
b. <i>Homo habilis</i>	2.5 mya
c. <i>Homo erectus</i>	1.7 mya
7. Although *Homo erectus* was close to us modern humans in body size, its brain size was still barely half of ours.
8. *Homo erectus*, as is attested by fossils discovered on the Southeast Asian island of Java, was the first human ancestor to leave Africa between 1.8 and 1mya.
9. Today, the best evidence suggests that humans did not arrive in Europe until 500,000 years ago.
10. By about 500,000 years ago, human fossils had diverged from older *Homo erectus* skeletons in their enlarged, rounder, and less angular skulls. African and European skulls of half a million years ago were sufficiently similar to skulls of us moderns that they are classified in our species, *Homo sapiens*, instead of *Homo erectus*. This distinction is arbitrary, though, since *Homo erectus* evolved into *Homo sapiens*. However, these early *Homo sapiens* still differed from us in skeletal details, had brains significantly small than ours, and were grossly different from us in their artifacts and behavior.
11. The major significant addition to our ancestors' cultural repertoire at the time was the use of fire.
12. No art, bone tool, or anything else has come down to us from early *Homo sapiens* except for their skeletal remains, plus crude stone tools.
13. About half a million years ago, the human populations of Africa and western Eurasia proceeded to diverge from each other and from East Asian populations in skeletal details.

14. The populations of Europe and western Asia between 130,000 and 40,000 years ago is represented by especially many skeletons, known as Neanderthals, and sometimes classified as *Homo neanderthalensis*. Despite being depicted in innumerable cartoons as apelike brutes living in caves, Neanderthals had brains slightly larger than our own. They were also the first humans to leave behind evidence of burying their dead and caring for their sick. Yet their stone tools were primitive.

15. The few preserved African skeletal fragments contemporary with the Neanderthals are more similar to our modern skeletons than to Neanderthal skeletons.

16. As for the lifestyle at the time, the best-preserved evidence comes from stone artifacts and prey bones accumulated at southern African sites.

a. Although those Africans of 100,000 years ago had more modern skeletons than did their Neanderthal contemporaries, they made essentially the same crude stone tools, still lacking standardized shapes.

b. To judge from bone evidence of the animal species on which they preyed, their hunting skills were unimpressive and mainly directed at easy-to-kill, not-at-all-dangerous animals. They were not yet killing buffalo, pigs, or other dangerous prey. They couldn't fish either.

17. The Great Leap forward, around 50,000 years ago.

a. East African sites and standardized stone tools and the first preserved jewelry (ostrich-shell beads).

b. Similar developments in southern Europe around 40,000 years ago, when Cro-Magnon people made harpoons, spear-throwers, and eventually bows and arrows. These weapons allowed men to hunt dangerous prey, while the invention of rope for nets, lines, and snares allowed fishing and bird hunting.

c. Remains of houses and sewn clothing testify to a greatly improved ability to survive in cold climates, while the remains of jewelry and carefully buried skeletons indicate revolutionary aesthetic and spiritual developments.

d. The best-known Cro-Magnon products are their cave paintings, statues, and musical instruments.

18. What enabled the Great Leap Forward? Where did it happen – in one location or many?

a. drop of the voice box or change in brain organization

b. second issue unresolved.

19. Movement into Australia/New Guinea – 30,000 years ago.

a. First use of water craft

b. First large scale animal extinction as a result of humans – why? Overkill or environment?

20. People come to the Americas?