



***Homo Habilis* (2-1.5 MYA)** East Africa (note genus shift here from *Australopithecus* to *Homo*)

Physical Traits: - brain larger (650-775 cc), possibly associated with meat eating  
- higher forehead (i.e., less sloping)  
- larger overall body size; feature more like us, hence classification in the *Homo* species

Culture: - first use of tools (Oldowan Tradition), consisting of choppers and other simple tools to cut up meat that was likely scavenged. Marrow may have been an important source of protein.  
- possible activity sites; butchering; but actual "home bases" and habitation sites not confirmed—debate surrounds this point, with some interpreting the butchering sites as home bases and other archaeologists seeing them as processing places ("on the spot" eating).

***Homo erectus* (1.6 MYA – 300,000 YA)**

- inhabited Africa, Asia, Europe

Physical Traits: - larger brain (2/3 the size of ours)  
- body short, but otherwise human like ours  
- head shape a bit different than ours—sloping forehead, browridges

Culture: - hunting for meat a key subsistence practice and major change from earlier times  
- use of fire a tremendous adaptive advantage, allowing migration to colder climates, cooking of food, protection from animals, warmth, and so on.  
- simple shelters for protection at temporary sites  
- Acheulian Tool Tradition: specialized tool forms. This implies teaching—the transmission of cultural information and practices from generation to generation.

***Homo neanderthalensis* (150-30,000 YA) "Neanderthals"**

- first found in Neanderthal Valley, Germany  
- a sub-species of *Homo sapiens* (we are *Homo sapiens sapiens*)  
- lived in Europe, N. Africa, Middle East  
- specimens from Europe tend to be bigger, more robust, due to harsh climate there (several ice ages during this period made environment much like arctic tundra)  
- specimens from other areas tend to be more gracile or less robust in terms of physical characteristics  
- disappear as a recognizable sub-species by ca. 30,000 YA (see debate, below)

Physical Traits: - eyebrow ridges  
- occipital bun (pronounced rear portion of head/skull)  
- robust jaw bone  
- head size (and brain size) slightly larger than ours (*Homo sapiens sapiens*)  
- large robust body and head; big nose and face

Culture: - appear to have lived in caves (at least our evidence comes from caves [where preservation is good])  
- Mousterian Tool Tradition: small flakes used to make delicate stone tools of different types according to necessity (task specific)  
- extensive use of fire, allowing habitation in cold climates

- first formal burials; Shanidar Cave (Iraq), burial with flowers; some graves with red ochre (evidence of ceremonial activities); animal skulls sometimes placed in or near burials (hence references to Neanderthals as "clan of the Cave bear, etc., as popularized in novels)

- Debate:
- did they mate and with *Homo sapiens sapiens* and thus form part of the genetic make-up of today's populations? No solution to this, but there is a growing consensus that they did not (see DNA evidence, in next section) This is still unresolved.
  - did they have language like us? A large brain is indisputable, but the pallet (inner top of mouth) was much lower than *H. sapiens sapiens*. No doubt they communicated, but the level of communication in terms of refined language capabilities is in question.

### Archaic *Homo sapiens* (300,000 – 100,000 YA)

- Africa, Indonesia, Europe

- Physical Traits:
- body identical to ours
  - face with very minor differences: slight brow ridges, slightly lower skull overall
  - brain size like ours

- Culture:
- not much known, but likely the same as the earliest *H. sapiens sapiens*

### *Homo sapiens sapiens* (ca. 90,000 YA to modern times)

- populate most of the planet by ca. 40,000 YA
- anatomically identical to us—we are *H. sapiens sapiens*
- reach the New World by ca. 20-15,000 YA via Bering Strait between Asia and N. America—modern Alaska (could walk across it during ices ages when sea level was much lower than it is currently)

- Culture:
- controlled use of fire; ability to make it on demand using flint or iron pyrite (both of which produce sparks when struck). This was a huge leap forward
  - increasingly elaborate tool making
  - burial goods and associated ritual now common
  - Art, including very elaborate cave paintings and portable "Venus" figurines (obese female effigies [small]) in Europe, perhaps fertility rituals

- Debate:
- Did *H. sapiens sapiens* (and their Archaic forerunners) evolve in Africa and then spread out and replace all other existing hominids—*H. erectus* and especially Neanderthals—without interbreeding? Or did they breed with these hominids? There is no clear answer to this and much debate, as we saw in the movie. But, DNA studies during the 1990s have added evidence that supports the "out of Africa" theory. Still, this is not resolved.