Homo Erectus Fossil 3: Turkana Boy

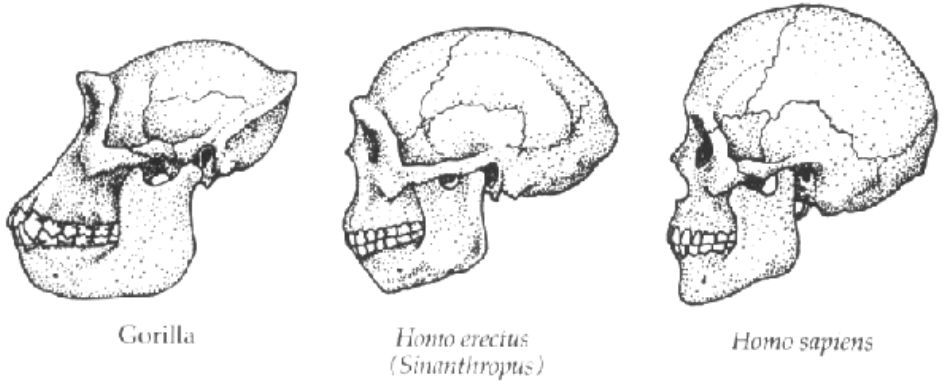
Site: Nariokotome, West Turkana, Kenya
Species: *Homo erectus*

The strapping youth
The microscopic structure of his teeth tells us how quickly his teeth grew – and thus his age: eight or nine years old. He was 5 ft 3 in tall and weighed 106 lb when he died; if he had reached adulthood, he might have grown only a little bit taller.

His body shows long legs and narrow shoulders typical of humans who live in hot, dry climates today. These long legs which helped Homo erectus walk and possibly run long distances. Homo erectus is the first known species to spread widely within Africa and throughout Asia.

The Turkana Boy's species made and used tools, with his cranial capacity (size of brain) almost double Australopithecus Afarensis's.

Homo Erectus: Skull comparison



Why did brain size increase? In other words, what factor selected for increased intelligence? It is possible that the advantage of being able to make tools selected for increased intelligence, and therefore, increased brain size? Or it is possible that increased sociality (larger group size) selected for increased intelligence (the larger the group size the more intelligence it takes to keep track of alliances, deceptions, etc.)? In this scenario, the consequent increased intelligence led to the advent of tool-making. Whatever the reason, selection for greater intelligence resulted in larger brain size, and a suite of other traits as well: a larger birth canal; since brain development continues after birth, a prolonged period of time between birth and maturity, and a longer period of parental care of infants. These traits may have then led to changes in social structure as well (e.g. a greater need for more extended parental care may have led to a sharper division of labor between males and females).

Homo Erectus Artifact 1: Fire-Altered Stone Tools

Age: About 790,000 years old
Site: Gesher Benot-Ya'aqov, Israel

Gathering at the hearth
The earliest hearths are at least 790,000 years old, and some researchers think cooking may reach back more than 1.5 million years. Control of fire provided a new tool with several uses—including cooking, which led to a fundamental change in the early human diet. Cooking released nutrients in foods and made them easier to digest. It also rid some plants of poisons.

Over time, early humans began to gather at hearths and shelters to eat and socialize. As brains became larger and more complex, growing up took longer—requiring more parental care and the protective environment of a home. Expanding social networks led, eventually, to the complex social lives of modern humans.

Homo Erectus Artifact 2: Skull of an old man

Site: Dmanisi, Republic of Georgia
Species: *Homo erectus*

This elderly male belonged to a population of *Homo erectus* that spread from Africa to western Asia. Most of his teeth fell out long before he died, and his jaw deteriorated as a result. Members of his social group must have taken care of him. This is some of the earliest known evidence for this kind of group care and compassion in the human fossil record. This hints that homo erectus likely had a larger brain size, capable of socialization and complex thought.