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From the Beginning of Time

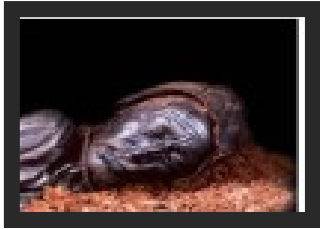
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The Story of Human Evolution



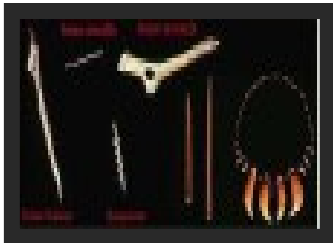
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Evolution of the Early Humans



Sources

1. Fossils
2. Stone tools
3. Cave paintings



History



1856-Neander Valley
Discovery of a skull that was a form of human

History



1859 - Darwin publishes 'The Origin of Species '.He argued that humans evolved from animals.

What are fossils?



The remains of a very old plant, animal or human that turned into rocks.

Discovery of Neanderthal man

- In 1856, workmen who were quarrying for limestone in the **Neander valley (Germany)** found a skull and some skeletal fragments. These were handed over to **Carl Fuhlrott**, a local schoolmaster and natural historian. He realized that they did not belong to a modern human. He then made a plaster cast of the skull and sent it to **Herman Schaaffhausen**, a professor of anatomy at Bonn University. The next year they jointly published a paper, claiming that this skull represented a form of human that was extinct. At that time, scholars did not accept this view. They argued that the skull belonged to a person of more recent times. But later they accepted it and named as Neanderthal man.

Creation of Human-being

Divine theory

According to the Bible human origin was an act of creation by God

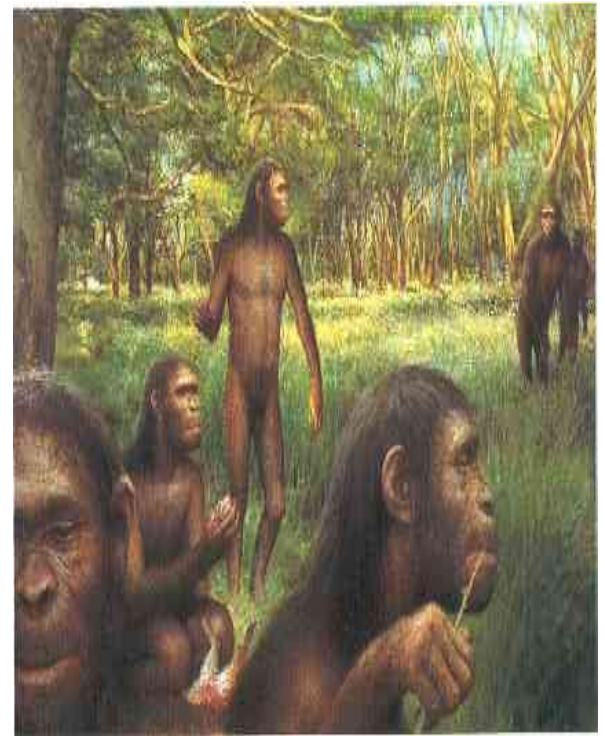
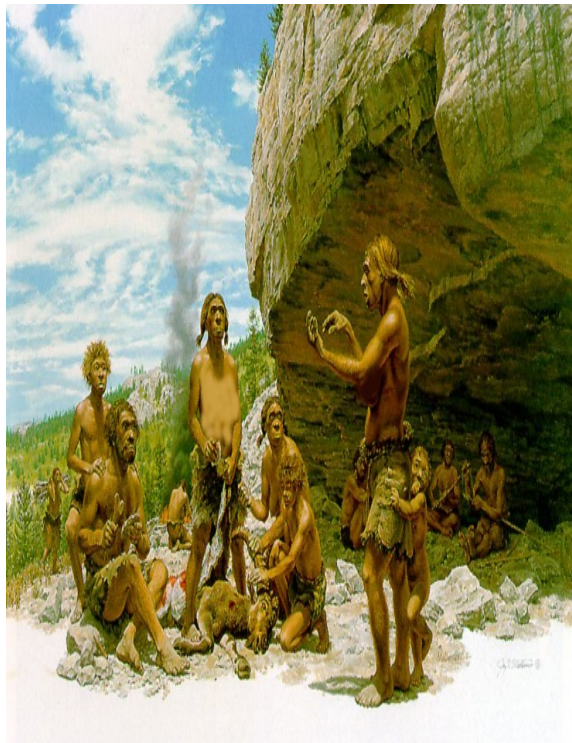
Scientific theory

According to Charles Darwin (**On the Origin of Species**) humans evolved from animals.

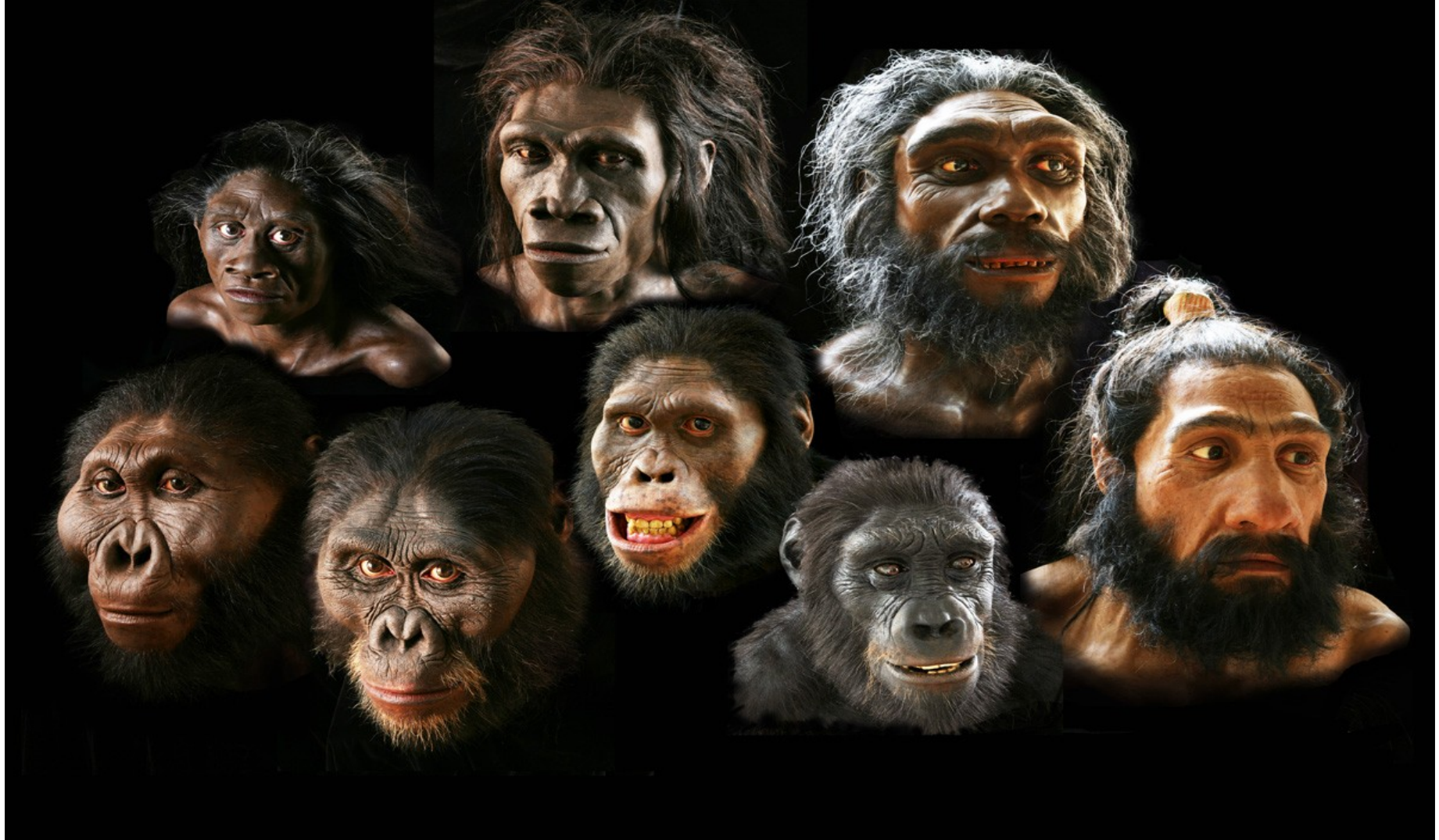
Define the term 'species'

Species is a group of organisms that can breed to produce fertile offspring.

Members of one species cannot mate with those of other species to produce fertile offspring.

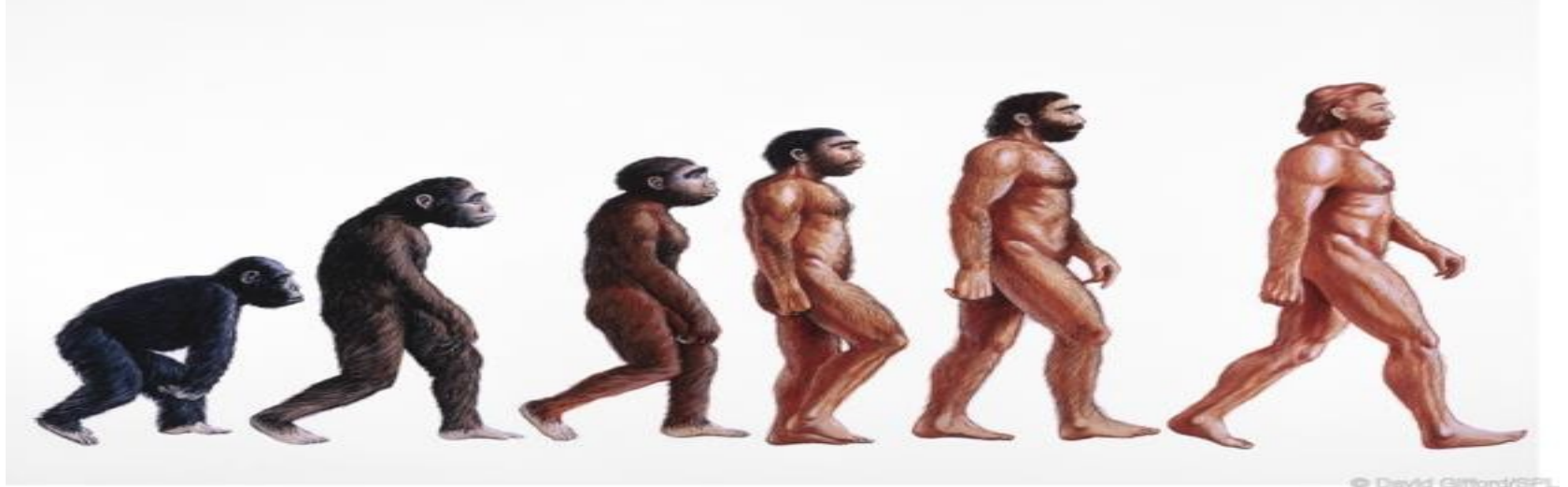


The story of Human evolution



Important stages in human evolution

Primates emerged around 36 mya
Hominoids evolved around 24 mya
Hominids emerged around 5.6 mya
Modern Humans originated about 160,000 years ago.



Primates and their features:

- Subgroup of a large group of mammals. This includes apes, monkeys and humans.
- i) Hair on the body.
- ii) Mammary glands among females to feed their babies.
- iii) Long gestation period following birth.
- iv) Different types of teeth.
- v) Ability to maintain a constant temperature

What is a hominoid?

- a sub group amongst primates (24 MYA)
- Included apes and humans
- Smaller brain
- Larger body
- longer period of infant development and dependency
- Quadrupeds (walking on all fours)

What is a hominid?

- Hominids were evolved from hominoids
- Hominids belong to a family known as Homindae
- upright posture
- bipedal locomotion, (walking on two feet)
- large brain,
- Specialization of hand



Hominids are further divided into branches (genus)

'Southern Ape'
small brain size
Heavier jaws
larger teeth



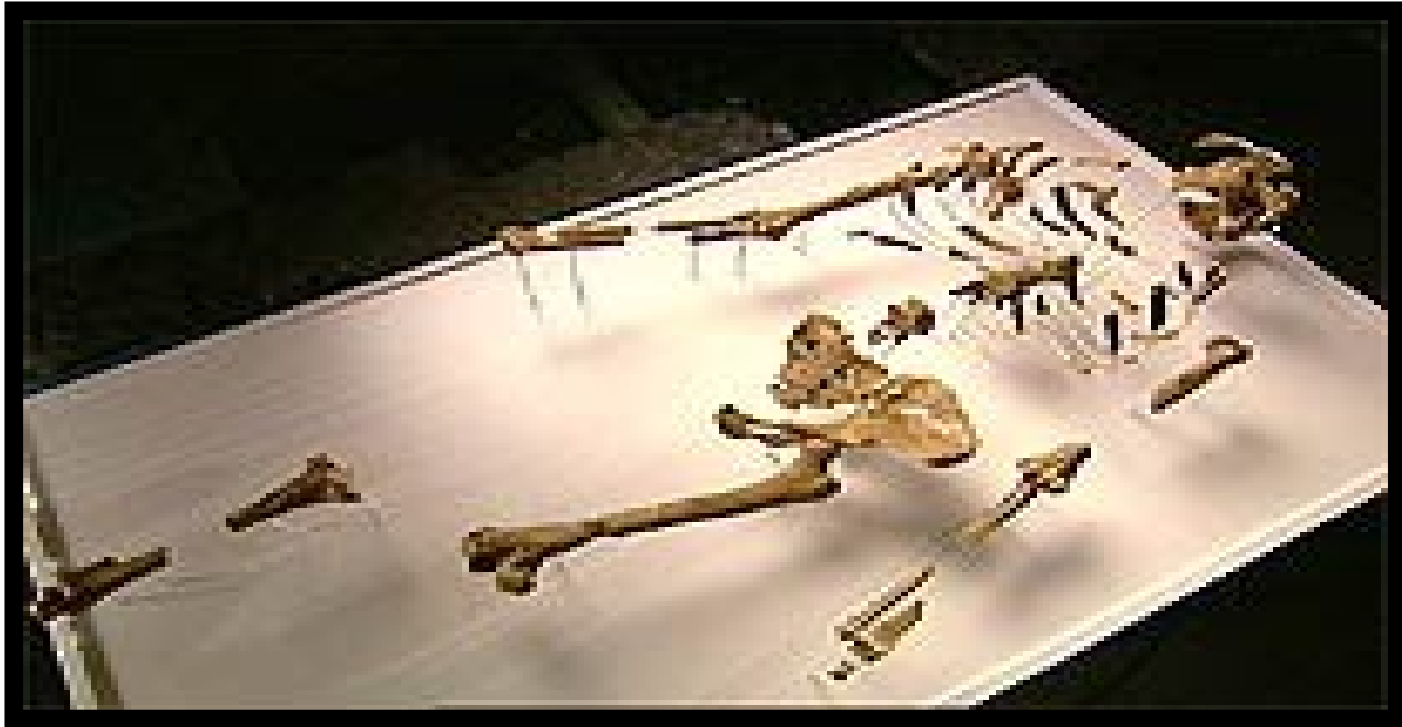
Australopithecus

'man'
larger brain,
jaws with a
reduced outward
protrusion
smaller teeth.



Homo

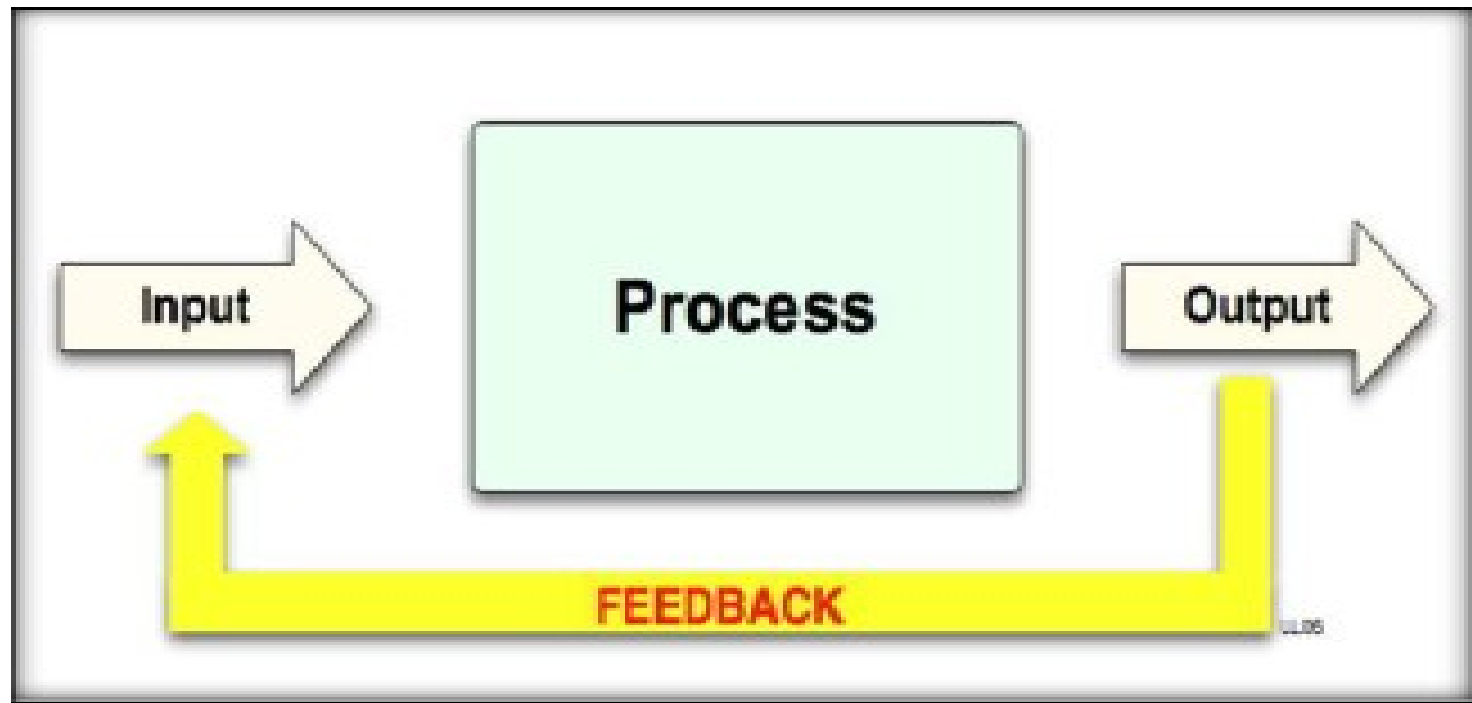
Classification of early human species



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Positive feedback mechanism

A positive feedback mechanism is a mechanism which accelerates or improves the output created by a stimulus that had been activated previously



Positive feedback mechanism

- A positive feedback mechanism allow cells to adapt to changes in. For example,
- Bipedalism enabled hands to be freed for carrying infants or objects.
- Bipedalism or upright walking helped to use less energy for hunting, carrying infants and making and using tools
- Visual surveillance favored for long distance walking, search food, find animals and many more works

The Laetoli (in Tanzania) footprints of hominids provided striking evidence of bipedalism



Types of Homo

It means “handy man” or tool maker

Fossils -Omo(in Ethiopia)

Olduvai Gorge(in Tanzania)

Homo habilis



HOMO ERECTUS



The upright man
Fossils-Africa and
Asia

Homo Sapiens



The Wise or thinking man
Fossils- Africa, Asia and
Europe

Homo heidelbergensis



Fossils found in Heidelberg (in Germany)



Homo neanderthalensis



Fossils found in the Neander valley



Centre of human origin

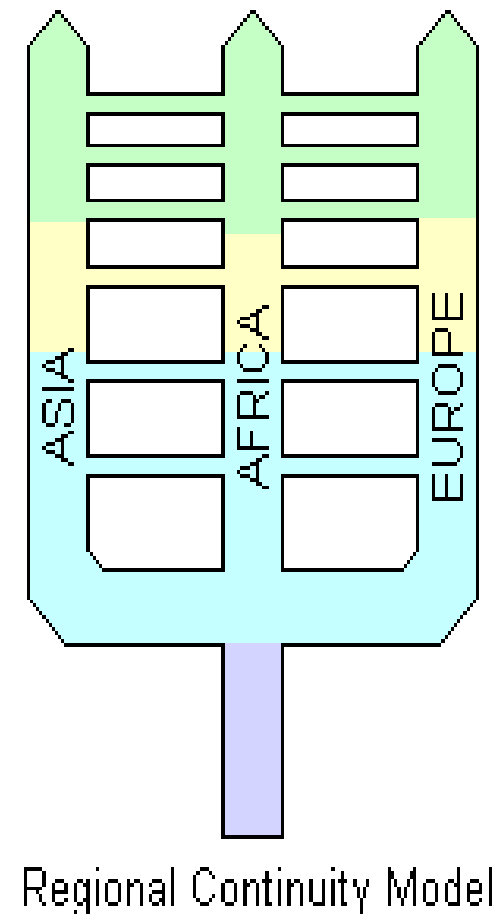
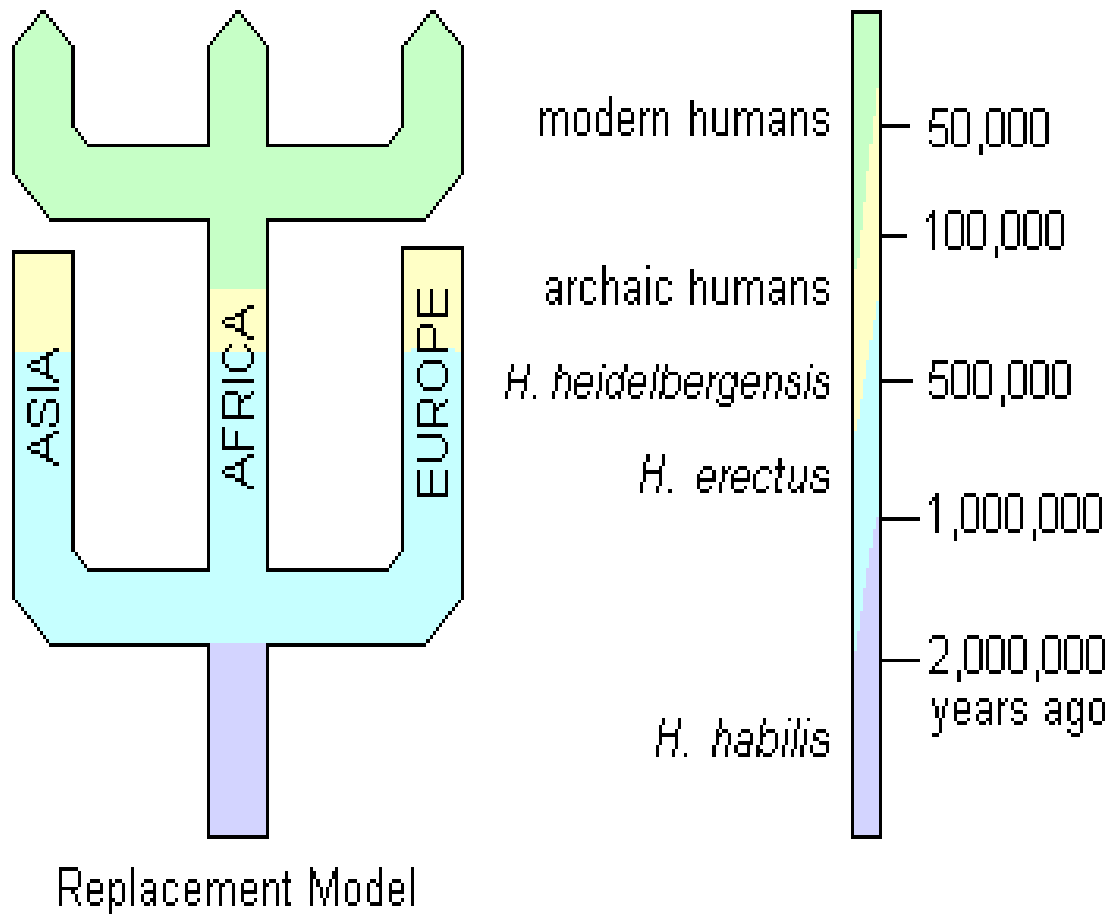


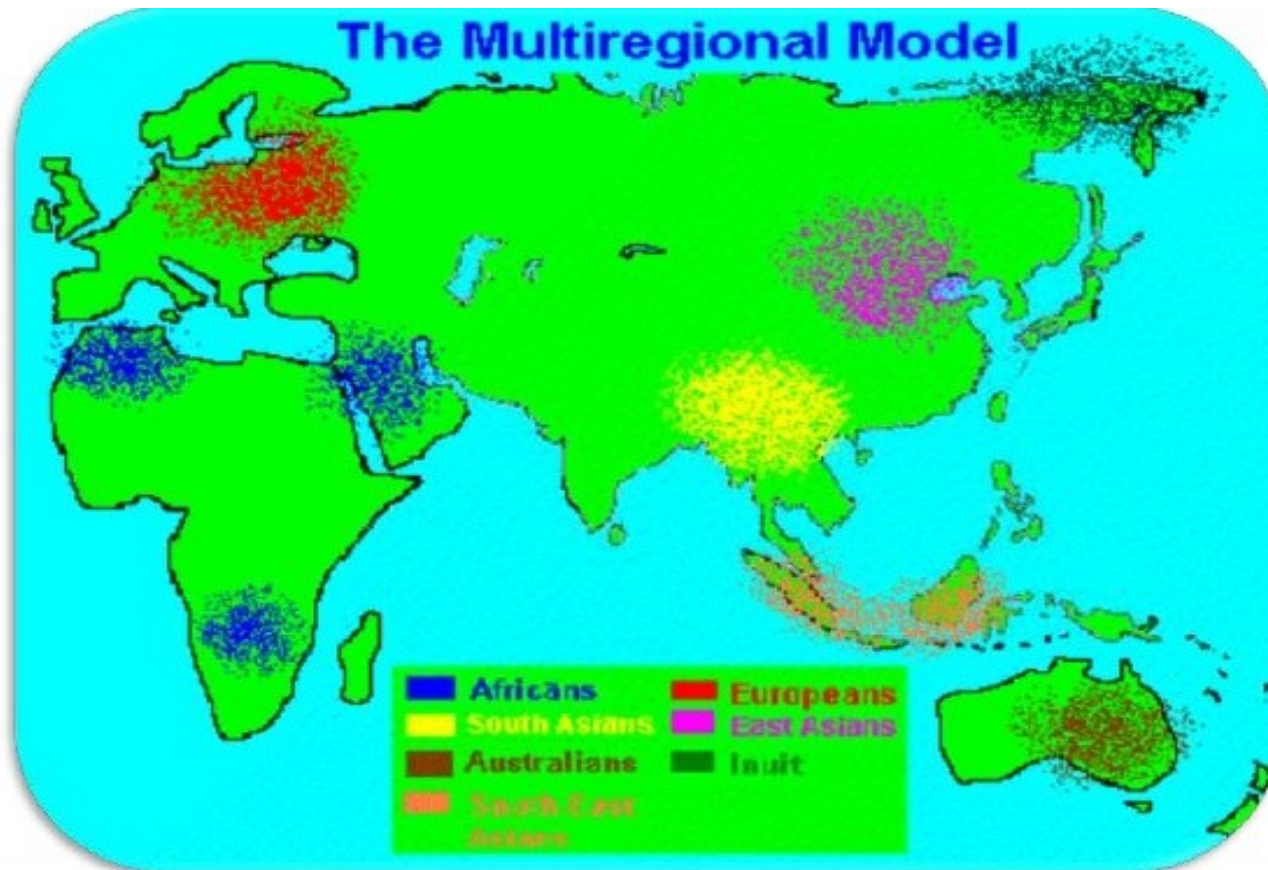
The Replacement and Regional continuity Model Theories

- Replacement model is referring to the theory that Homo erectus originated in Africa, evolved into Homo sapiens, dispersed through out the rest of the world replacing archaic predecessors.

● Regional continuity model is the theory that humans evolved simultaneously across the entire Old World from several ancestral populations

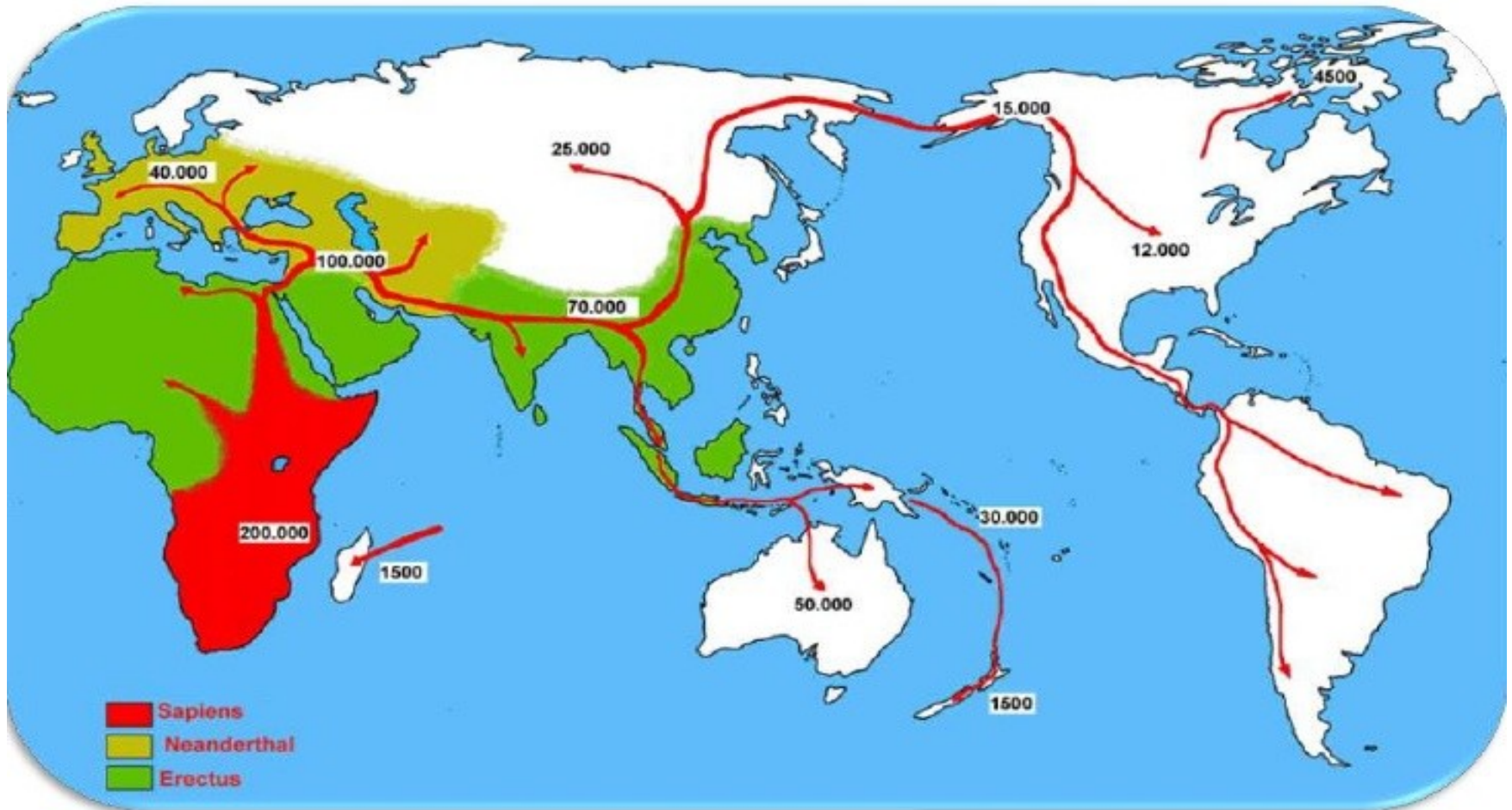
The Replacement and Regional continuity Model Theories





The multiregional model. The model according to some of its proponents also holds that the different races like Africans, Europeans and Asians evolved separately.

The 'Out of Africa' model



The 'Out of Africa' model. The numbers shown is the time (in years) when the earliest fossils of modern humans have been found in different parts of the world.

Early Humans:

Ways of obtaining food

- Gathering
- Hunting
- Scavenging
- Fishing



Ways of obtaining food

- **Gathering** would involve collecting plant foods such as seeds, nuts, berries, fruits and tubers.



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Ways of obtaining food

- **Hunting** probably began later about 500,000 years ago. The earliest clear evidence for the deliberate, planned hunting and butchery of large mammals comes from two sites: Box grove in southern England and Schoningen in Germany.



Ways of obtaining food

- **Scavenging:** Early hominids scavenged or foraged for meat and marrow from the carcasses of animals that had died naturally or had been killed by other predators.



Ways of obtaining food

- **Fishing:** Fishing was also important, as is evident from the discovery of fish bones at different sites.



Early Humans: From Trees, to Caves and Open-air Sites

- By plotting the **distribution of artefacts**, we can find out the place of residence of the hominids.
- Some places, where food resources were abundant, humans visited repeatedly have more artefacts. Early humans left behind traces of their activities and presence .
- The places that were less frequently visited would have fewer artefacts. Thousands of flake tools and hand axes have been excavated at Kilombe and Olorgesailie(Kenya)

From Trees, to Caves and Open-air Sites

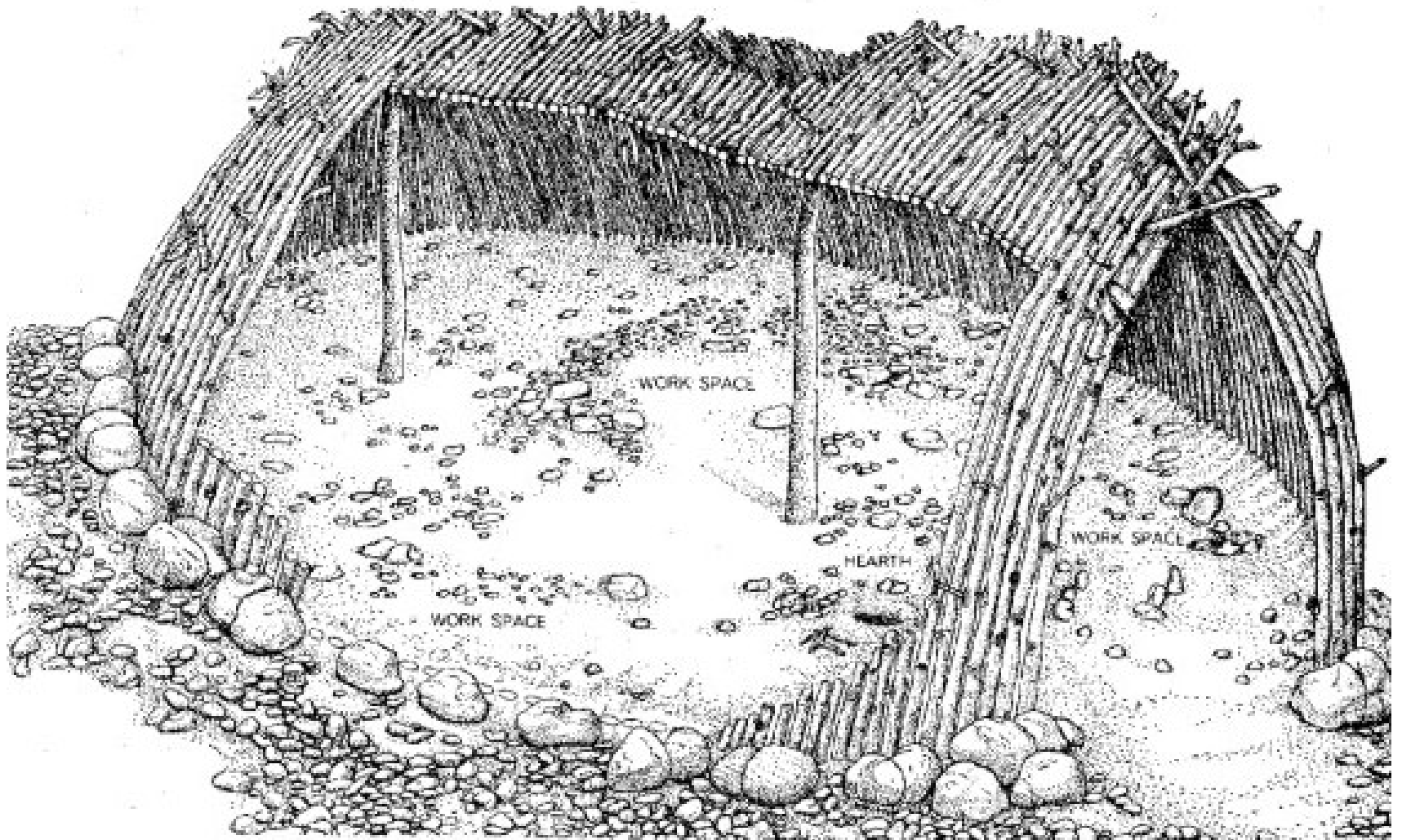
- **Same locations (trees)** could have been shared by hominids, other primates and carnivores. Early hominids probably consumed most of the food where they found it. They slept in different places, and spent much of their time in trees



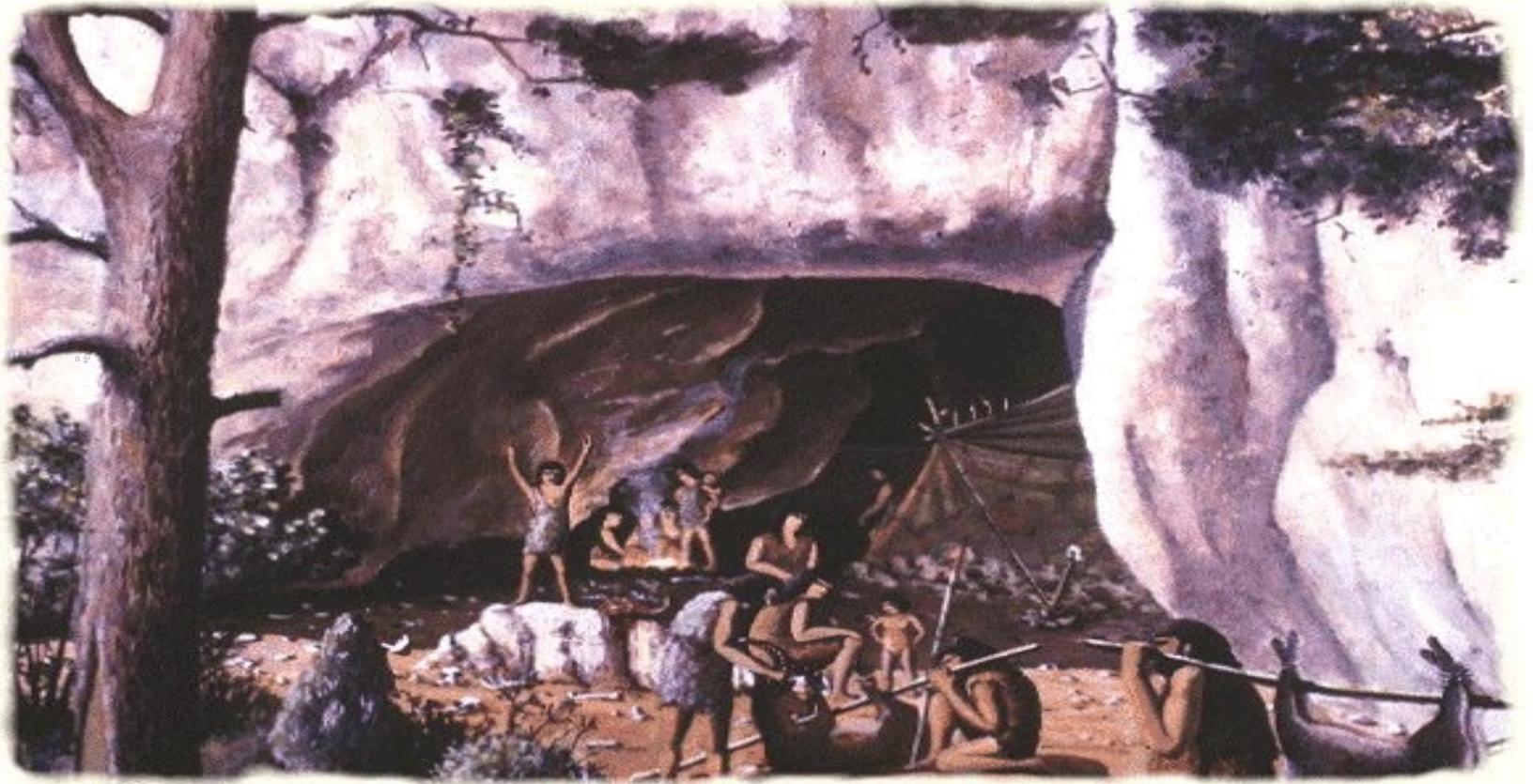
From Trees, to Caves and Open-air Sites

- **Shelters near caves and open air spaces:**
Between 400,000 and 125,000 years ago, natural caves began to be used by them. Evidence for this comes from sites of Europe. In the Lazaret cave in southern France, 12x4 metre shelter was built against the cave wall. At Terra Amata in southern France, flimsy shelters with roofs of wood and grasses were built for short-term, seasonal visits.

From Trees, to Caves and Open-air Sites



From Trees, to Caves and Open-air Sites



From Trees, to Caves and Open-air Sites

- **Pieces of burnt clay and Burnt Bones along with stone tools** have been found at some sites in Kenya and South Africa. We do not know these were the result of a natural bushfire or volcanic eruption or controlled use of fire.



From Trees, to Caves and Open-air Sites

- **The uses of fire**

- To provide warmth and light inside caves
- To harden wood
- To scare away dangerous animals
- For cooking
- For flaking tools



Early Humans: Making Tools

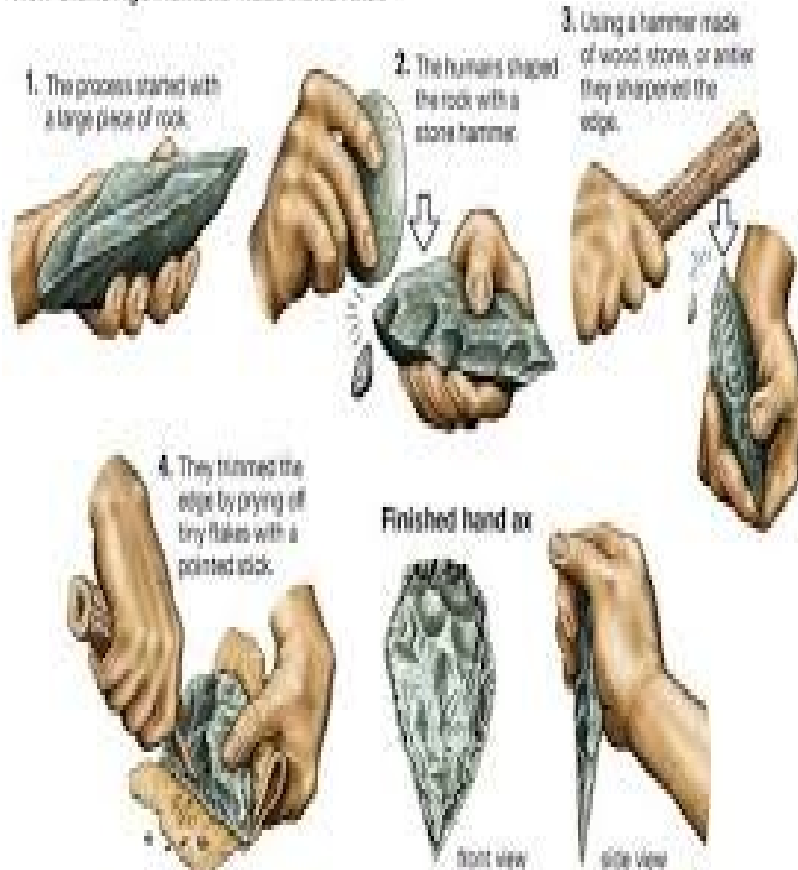


Early Humans: Making Tools

- The use of tools and tool making are not confined to humans. Some chimpanzees use tools that they have made.
- Certain **anatomical and neurological**(related to the nervous system) adaptations have led to the skilled use of hands.
- The ways in which humans make tools require **greater memory and complex organizational skills**. Both are present in humans
- The earliest evidence for the making and use of stone tools comes from sites in Ethiopia and Kenya.
- It is likely that the earliest stone tool makers were the Homo habilis.
- We do not know whether tool making was done by men or women or both

Early Humans: Making Tools

How Stone Age Humans Made Hand Axes



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About 35,000 years ago, improvements in the techniques for killing animals are evident from the appearance of new kinds of tools. Such tools included **spear throwers and bow and arrow**.

There were other needs such as the **trapping of fur-bearing animals** (to use the fur for clothing) and the **invention of sewing needles**.

The earliest evidence of sewn clothing comes from about 21,000 years ago.

Besides, with the **introduction of the punch blade technique** to make small chisel-like tools, it was now possible to make engravings on bone, antler, ivory or wood.

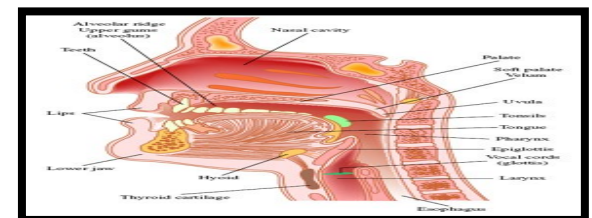
Modes of Communication

:Language

- Among living beings, it is humans alone that have a language
- There are several views on language development
- 1.The first user of language was hominid. Hominid language involved **gestures or hand movements**
- 2.Spoken language was preceded by **vocal but non verbal communication** such as singing and humming
- 3.Human speech probably began with calls among primates

Modes of Communication :Language

- Humans may have possessed a small number of speech sounds in the initial stage. Gradually these may have developed into language.
- It has been suggested that the brain of Homo habilis had certain features which would have made it possible for them to speak. Thus ,language may have developed as early as 2MYA.
- The evolution of vocal tract was equally important .This occurred around 200,000 years ago. It is more specifically associated with modern humans.
- Another suggestion is that language developed around the same time as art, that is, around 40,000-35,000 years ago. The development of spoken language has been seen as closely connected with art, since both are media for communication.

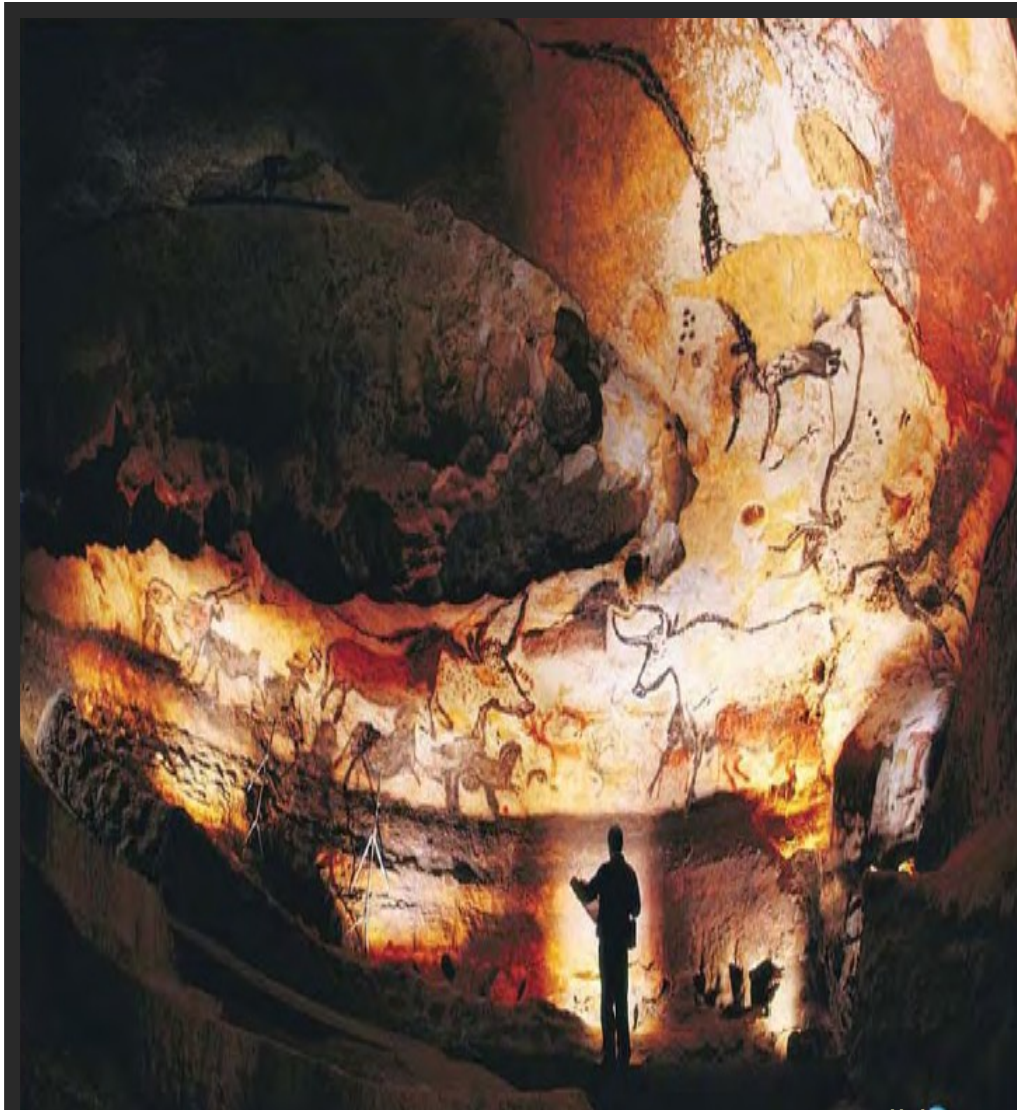


Modes of Communication: Art



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Paintings of animals have been discovered in the caves of Lascaux and Chauvet in France and Altamira in Spain



Replica of Lascaux Cave Painting, France

Discovered in 1940, the Lascaux (lah•SKOH) cave contains more than 600 painted animals and symbols. These works were probably created between 15,000 and 13,000 B.C. In 1963, the cave was closed to the public. The high volume of visitors and the use of artificial lighting were damaging the paintings. A partial replica of the cave was created and is visited by about 300,000 people a year.

Modes of Communication: Art

- 1. Hundreds of paintings of animals done between 30,000 and 12,000 years ago have been discovered in the caves of France and Spain. These include depictions of bison, horses, ibex, deer, mammoths, rhinos, lions, bears, panthers, hyenas and owls.
- 2. Several explanations have been offered. One is that because of the importance of hunting, the paintings of animals were associated with rituals and magic.
- 3. The act of painting could have been a ritual to ensure a successful hunt.
- 4. Another explanation offered is that these caves were possibly meeting places for small groups of people or locations for group activities. These groups could share hunting techniques and knowledge, while paintings and engravings served as the media for passing information from one generation to the next.
- 5. The above account of early societies has been based on archaeological evidence. Clearly, there is much that we still do not know.



Hunter -gatherer Societies

Hunter-Gatherer Societies From the Present to the Past

- Our knowledge of present-day hunter-gatherers increased through studies by anthropologists
- Anthropology is a discipline that studies human culture and evolutionary aspects of human biology of the past
- Whether the information about living hunters and gatherers could be used to understand past hunter-gatherer societies. There are two opposing views on this issue.
- One group of scholars suggests that data from present-day hunter-gatherer societies can be used to understand the past societies

Hunter-Gatherer Societies From the Present to the Past

For Example

- Some archaeologists suggests that the Hominid sites(dated to 2 mya) along the margins of Lake Turkana could have been the dry season camps of early humans. Such practice has been observed among the **Hadza** and the **Kung San**.





Two Hadza men return from a hunt. The Hadza are one of the few contemporary African societies that live primarily by foraging.

Hunter-Gatherer Societies From the Present to the Past

- Ethnography is the study of contemporary ethnic groups. It includes an examination of their modes of livelihood, technology, gender roles, rituals, political institutions and social customs
- On the other side another group of scholars who feel that ethnographic data cannot be used for understanding past societies as the two are totally different
- For instance, present-day hunter-gatherer societies pursue several other economic activities along with hunting and gathering.
- 5. These include engaging in exchange and trade in minor forest produce, or working as paid labourers in the fields of neighbouring farmers and these societies are totally marginalized in all senses – geographically, politically and socially.

Developments between 10,000 and 4,500 BCE in early human life

- For several million years, humans lived by **hunting wild animals and gathering wild plants**. Then, between 10,000 and 4,500 years ago, people in different parts of the world learnt to **domesticate certain plants and animals**. This led to the development of **farming and pastoralism** as a way of life. The shift from hunting to farming was a major turning point in human history.
- With the introduction of agriculture, more people began to stay in one place for even longer periods than they had done before. Thus **permanent houses** began to be built of mud, mud bricks and even stone. These are some of the earliest **villages** known to archaeologists.
- Farming and pastoralism led to the introduction of many other changes such as the **making of pots** in which to store grain and other produce, and to cook food.
- Besides, **new kinds of stone tools** came into use. Other new tools such as the wooden plough were used in agriculture. Gradually, people became familiar with **metals such as copper and tin**.
- The **wheel** , important for both pot making and transportation, came into use. About 5,000 years ago, even larger concentrations of people began to live together **in cities**.

