

UNIT TWO

EARLY DEVELOPMENT OF HUMAN BEINGS

Introduction

Perhaps, no other subject has even been controversial than the issue of human origins. One proof to this conjecture is the very presence of two antithetical theories called the *Creationist* and the *Evolutionist*, (or the scientific) theory. Since the middle of the 19th century, in particular, there has been a constant growth in the scientific knowledge of the origins of human beings. This was the result of efforts made by scholars attached to a number of newly emergent disciplines, like archaeology and anthropology. This unit presents very briefly the current knowledge on human origins, including the evolution of early human cultures.

Objectives

After completing this unit you will be able to:

- analyze the processes in the development of early human beings as they progressed from food gathering to more advanced ways of life;
- explain the role of the Ethiopian Rift Valley as the cradle of human being;
- describe the major sites where the Neolithic Revolution took place in Ethiopia and the rest of the world.

Terms to Know

- | | |
|-------------------|------------------------|
| - Anthropologist | - Direct percussions |
| - Artifacts | - Flakes |
| - Bifacial | - Microlithic |
| - Bipedalism | - Paleo anthropologist |
| - Cores | - Pongidae |
| - Composite tools | - Sedentary |

2.1. Theories of the Origin of Human Beings

Questions for Discussion and Practical Work

What is theory

What is evolution?

What is the difference between evolutionary change and revolutionary change?

What is the relationship between cultural and biological changes?

Creationist view

How long people had been living on earth remained unsettled for a long period of time and the question of the origin of human being attracted human thought for centuries. The creationist view believe that human was created by a supernatural force with all complete physical shape and structure.

Scientific view

During the Industrial Revolution, geologists began extracting raw materials for industrial purposes. While they were digging, they came across fossils and artifacts. As a result of this, some scholars came to realize that the earth was formed entirely by natural processes rather than by divine power. This led to a strong debate between the creationist and evolutionary groups.

The debate over the origin of the human being culminated in the middle of 19th century with the publication of the work of Charles Darwin's work entitled the "Origin of Species by Natural Selection". This theory explains that human beings developed from lower beings through a gradual and natural process of change.

Darwin's scientific work described evolution and natural selection as a theoretical explanation for evolutionary philosophy and eventually it became the most convincing of all theories of evolution.

2.2. Human Evolution

Hominids

A hominid is a member of the scientific family made up of human beings and prehistoric human like creatures. The two African apes, gorillas and chimpanzees are the closest living relatives of humans. These species are classified as members of a different zoological family, often called *pongidae*. Anthropologists believe that human beings, chimpanzees and gorillas all developed from a common ancestor that lived between 8 and 5 million years ago.

Biochemical studies of the fossil evidence have told us a great deal about the relationship between humans and apes. About 98.5 percent of the genes in people and chimpanzees are identical, making chimps the closest living biological relatives of humans. This does not mean that humans evolved from chimpanzees, but it does indicate that both evolved from a common ape ancestor. Investigators have calculated that the split between hominids and the line leading to chimpanzees and gorillas occurred about million years ago.

The First Humans

Australopithecines

By around 6 million years ago in Africa, an ape like species had evolved with two important traits that distinguished it from apes: (1) small canine teeth and (2) bipedalism- that is walking on two legs as the primary form of

locomotion. Scientists refer to these earliest human species as australopithecines or australopiths for short. The name ausralopithecines translates literally as "southern ape", in reference to south Africa, where the first known australopith fossils were found. Countries in which scientists have found australopiths fossils include Ethiopia, Tanzania, Kenya, South Africa and Chad. Thus, autralopiths ranged widely over African continent.

Some characteristics of australopiths reflected their ape ancestry. They had a brain size of 390 to 550 cc or cubic centimeter in the range of an ape's brain. The body weight ranged from 27 to 49 kg, and they stood 1.1 to 1.5m. Their weight and height compare closely to those of chimpanzees.

Paleoanthropologists recognize at least seven species of australopithecines.

	Name of species	Place of Discovery	Age Estimated Time	Year of discovery
1	Australopith ecus anamensis	Kenya	4.2 - 3.9 million years ago	1994
2	Australopith ecus afarensis	Ethiopia	3.9 - 2.9 million years ago	1974
3	Australopith ecus bahrelghazali	Central Africa (around lake chad)	3.5 - 3 million years ago	
4	Australopith ecus aethiopicus	Lake Turkana region in Kenya	2.9 - 2.6 million years ago	1985
5	Australopith ecus africanus	Southern Africa	3 - 2.5 million years	1924
6	Australopith ecus boisei	East Africa	2.5 - 1.5 million years	1959
7	Australopith ecus robustus	Southern Africa	2.5 - 1.5 million years	1938

Australopithecus aethiopicus, Australopithecus boisei and Australopithecus robustus are known as robust australopithecines because of their heavier bones and larger jaws.

Origin of genus home

It is probably in Africa where the genus Homo originated at about 2.5 million years ago. Australopithecines afarensis may well have been an ancestor of the genus Homo. Members of genus Homo had larger brains and smaller jaws than the australopithecines.

Homo habilis, the oldest type of human being, lived in eastern and southern Africa about 2 million years ago. A partial skull of *Homo habilis*, dated to about 1.9 million years ago was uncovered in the lower Omo Basin, in Ethiopia. Other important sites of *Homo habilis* include Olduvai Gorge in Tanzania, Sterkfontein in South Africa and Lake Turcana in northern Kenya. *Homo habilis* made the first stone tools which consisted of flakes and cores and are known as Oldowan technology, named after the Olduvai Gorge in Tanzania.

Homo erectus seems to have originated in Africa and became the earliest human species to migrate from Africa to northern Asia and Europe. The oldest fossils of this species are about 1.7 to 1.8 million years old. *Homo erectus* had a slightly smaller brain and slightly larger teeth than what modern human beings have. The species stood over 1.5m tall and walked upright.

Homo erectus made little tools known as "Acheulean". The name derives from a small town in France called St. Acheul, where the first stone tool of the variant was uncovered. They were probably the first human beings to master the use of fire around 1.5 million years ago. The sites in Ethiopia, where fossils of *Homo erectus* were uncovered, include the lower Omo Basin, Melka - Kunture, Konso- Gardula, Middle Awash and Gadeb. Other *Homo erectus* fossils were found in Indonesia, Germany and China.

Homo sapiens are classified into two sub-groups. One is "archaic" *Homo sapiens* and the other is "modern" *Homo sapiens*. Archaic *Homo sapiens* seems to have evolved from *Homo erectus* some time between 300,000 and 600,000 years ago and is considered as an intermediate between *Homo erectus* and modern human being. Much of Africa and Europe seem to have been occupied by various populations of archaic *Homo sapiens* for several hundred thousands years.

A partial cranium and other bones of archaic *Homo sapiens* were uncovered at Bodo in the Middle Awash. Other fossils and microlithic stone tools of archaic *Homo sapiens* have been discovered at different sites in Africa and Eurasia.

"Modern" *Homo sapiens* include all living people plus those fossil populations from about the last 100,000 years. They are anatomically very similar to the living human being. The oldest dated sites are found in Africa, Near and Middle East as well as in Europe. Several fossils of *Homo sapiens* including a complete skull which may be more than 100,000 years old have been discovered at Kibish in the Lower Omo Basin. A lower jaw dated about the same age has been uncovered from the cave site of Porc Epic near Dire Dawa.

Modern human beings lived across Africa, Eurasia and Australia some 35,000 years ago. They also spread into the Americas as well. These people lived everywhere by gathering plant foods around them and by hunting.

2.3. Early Cultural Development

Questions for Discussion and Practical Work

How do cultural remains help us to interpret human evolution?

What kind of tools were introduced by Homo habilis and Homo erectus?

What were the differences between the cultures of Upper Paleolithic and Lower Paleolithic?

The stone Age was a period of human technological development characterized by the use of stone as the principal raw material for tools. The Stone Age began roughly 2.5 million years ago, ended in some parts of the world 5,000 years ago. When pre-historic humans began to make stone tools they became distinct from the rest of the animate world. This stone tool making and tool using behavior had a profound effect on human evolution.

Archaeologists have divided the Stone Age into different stages, each characterized by different types of tools or tool - manufacturing techniques. The most widely used designations are Paleolithic (Old Stone Age), Mesolithic (Middle Stone Age) and Neolithic (New Stone Age). Archaeologists subdivide the Paleolithic into the Lower Paleolithic (the earliest phase), Middle Paleolithic and Upper Paleolithic (the later phase).

Early Stone Age (Lower Paleolithic)

The lower paleolithic dates from about 2.5 million years ago until about 200,000 years ago. Two successive tool making industries characterize the lower paleolithic: the Oldowan and the Acheulean.

About 2.5 million years ago early humans in Africa made the first tools of stone. Scientists call these tools and the technique used to make them Oldowan, after the site of Olduvai Gorge in Tanzania, where many have been unearthed. It is also sometimes referred to as the chopper - core or pebble - tool industry. Oldowan tool making involved hitting one palm-sized cobblestone against another. This process created large, sharp-edged core tools capable of breaking bones and slicing meat or vegetation and smaller flakes that could scrape hides and sharpen wooden sticks.

Oldowan sites

Country	Site	Age
Ethiopia	Gona, Afar	2.5 mill years
	Omo	2.3 mill years
Kenya	Lokalalei	2.3 mill years
	Kobi Fora	1.9-1.4 mill years
Tanzania	Olduvai Gorge	1.9-1.2 mill years

Algeria	Ain Hanech	1.7 mill years
South Africa	Sterkfontein and Swart Krans	2-1.5 mill years

The Oldowan tools were made by a technique known as the "direct percussion" method. To make these tools, an early human used a hammer stone to strike a large cobblestone called a core. Some of the flakes that came off the core had very sharp edges, making them ideal for cutting into animal carcasses and scraping animal hides. A core with many flakes removed, giving it sharp ridges, was used as a chopper to break open animal bones for marrow.

The Acheulean tools, were first developed about 1.5 million years ago. The term Acheulean is now used to refer to hand axe industries in Africa, the Near East, Europe and Asia dating from 1.5 million to 200,000 years ago. It stretches human evolution from Homo erectus to early archaic Homo sapiens. Acheulean tools are known as "bifaces". Among these hand axes are cleavers that were flaked on both sides in a regular pattern. Hand axes are typical of the Acheulean tool industry. The Acheulean tools usually had sharp edges, a pointed end and were round at the top.

Among the oldest Acheulean sites in Ethiopia are Konso-Gardula, Gadeb and Melka Kunture. In general, Oldowan tools are identified with Homo habilis while the Acheulean is associated with Homo erectus.

Later Acheulean hand axes may have been produced by the soft-hammer technique, in which a softer hammer of stone, bone or antler produced thinner, more carefully shaped forms. The hand axes and cleavers were excellent tools for heavy-duty butchery activities such as severing animal limbs.

Middle Stone Age (Middle Paleolithic)

The Middle Paleolithic extends from around 200,000 years ago until about 30,000 years ago. It was at this time that Homo-Erectus evolved into the human species called Homo sapiens or Modern human.

Middle Paleolithic /Middle Stone Age/ archeological sites are often found in the deposits of caves and rock shelters for they are easy to defend against predators and provide warmth and shelter. Studies on Middle Stone Age populations help to understand the anatomy, behaviour, adaptation and cultural development of modern man.

In Africa, south of the Sahara, hominids stopped making hand axes and large tools about 200,000 years ago. Instead they began to make a wider variety of smaller tools based on flake technology. Some of these tools were hafted as spear point and knives.

Gademotta Middle Stone Age site, located in the central Ethiopian Rift Valley, is one of the oldest sites in the African continent, and has been dated to 200,000 years ago. Other sites such as Melka-Kunture, Porc Epic, and

Kone in Ethiopia and Midhishi and Gud Gud in Somalia are important sites that have offered note worthy information about Middle Stone Age communities in the Horn of Africa.

In general, Middle Stone Age sites continued to show little change in the making of tools and manifestations of different behaviour over many thousand years of human generation. However, with the passage of time, these communities developed distinct regional traditions. It was at this time that the technological prerequisite for regional diversification and specialization began to develop and appear. This involved a refinement and standardization of tool-making techniques, an increase in the number of tool traditions and the exploitation of the environments.

Later Stone Age (Upper Paleolithic)

The Upper Paleolithic extends from about 40,000 years ago until the end of the last ice age about 10,000 years ago. In the Upper Paleolithic, standardized blade industries appear and become much more widespread than in previous times. Toward the end of the Upper Paleolithic, microliths (small, geometric - shaped blade segments) became increasingly common in many areas. In Africa these new tools are called Late Stone Age where as in Europe they are referred to as "Upper Paleolithic". Bone was commonly used to make tools of many types.

It was at this time that human biological and cultural evolution occurred at an increasingly rapid pace. This change involved complexity and efficiency of culture at greater diversity and increased specialization. Humans began to use new tool-making techniques known as "pressure flaking". The techniques produced long and thin blades that performed different tasks. Generally, the Late Stone Age artifacts, show further reduction in size, are fitted into handles and used as "Composite Tools" in arrows and bows. They are distinguished by micro lithic blade technology.

The Neolithic Revolution

This period refers to the time after 11,000 years ago when food producing through the domestication of plants and animals replaced foraging as the dominant mode of subsistence.

Ninety-nine percent of human history, as a species, was spent on hunting-gathering and consuming wild products of the earth, a period extending back to at least 4 million years. Nevertheless, about 11,000 years ago, some human groups began to produce food rather than collect it. This phenomenon is considered as a turning point in the history of human being that represents a revolution in subsistence. Many different people began a slow process of artificial selection, tending plants and farming animals and most human groups adopted food production as their primary subsistence strategy. Consequently, humans way of life and the landscape changed considerably. People began to organize themselves around a base camp to

which they returned regularly. There were more innovations in artifacts and more advances were made in human behavior than in the preceding periods.

The rise of agriculture, according to most scientists, began in the Middle East. The first farmers lived in a region called the Fertile Crescent, which covers what is now Lebanon and parts of Iran, Iraq, Israel, Jordan, Syria and Turkey. We observe sites of sedentary life, domestication of plants and animals, new tools and diversification of human diets, that implied divisions of labour. As a result of the sedentary life, there emerged families and communities who inhabited a defined territorial areas. Stone houses as well as other kinds of structures were built for the community. This is how villages and little towns came into being. This was followed by the appearance of societies who were organized and divided into classes priests, chief tains, merchants, craftsmen, shepherds, etc. The labour hierarchy was born from their dimension of tasks.

Neolithic human being invented the hatchet and millstones to grind cereals. Pottery was also made for food cooking and storage facilitates. All food was kept in earthen ware vases. Artifacts were increasingly exchanged. Human beings soon learned how to make fire to cook their food and protect themselves from cold. This period also witnessed the emergence of sacred places and traditional religions.

Finally, populations increased and this led to conflict. When a village lost its crops and its herds and when its population increased, it would be tempted to take the resources of the nearby communities. Under this conditions the first conflicts started.

The Neolithic Revolution in the Ethiopian Region

In Ethiopia and the Horn of Africa the Neolithic cultural evolution and its development are not vivid. Some elements of Neolithic tradition together with other cultural manifestations can be observed in the northern and southern parts of Ethiopia. The presence of a ceramic tradition, polished stone tools, domestication of plants and animals, and sedentary life are some of the characteristics of the Neolithic culture.

The existence of this Neolithic types of culture in the northern part of Ethiopia and the Horn of Africa is attested from Gobedra rock shelter (3000 B.C), and Lalibela Cave (500 B.C). Grinding and polished axes have also been found at Aqordat and Barentu in Eritrea. These sites provide Neolithic material cultural such as axes, ceramics, grinding stones, beads, stone figures, etc. These culture manifestations indicate the development of Neolithic culture in Ethiopia and the Horn which paved the way for the emergence of complex societies.

The archaeologist Dombrowski had excavated chick peas and vegetables dated to 500 B.C at Lalibela Cave. Another archaeological evidence of possible domesticated cattle dated to the mid 2nd millenium B.C

have been found at the Lake Basaka site. The other fauna remains of dental fragments of a camel dated to 2500B.C comes from Gobedra.

Therefore, it is assumed that the practice of agricultural tradition in Northern Ethiopia was already in existence between 3000 and 2000 B.C.

During this time Neolithic culture in Ethiopia, new economics and cultural development, appeared. The communities evidently started sedentary life, domestications of animals and plants and used ceramics. The presence of diverse environment in Ethiopia and the Horn made the region the homeland of many plant species, which brought about the cultivation of root plants and crops such as *enset*, *teff*, *noog*, finger millet, *chat* and coffee. To day these plants such as Enset are dispersed in different parts of the country and have become important food crops.

Summary

The concept of evolution can be traced from the developments over the last 3000 years. The 19th century was a turning point in regard to evolutionary theory. The publication of Darwin's work "The Origin of Species" crystallized the theory of evolution.

African hominids that appeared around 5 million years ago are the oldest Australopithecines connected with the origin of man.

A variety of species with different brain sizes and body configurations have been identified. Human beings are distinguished by large brain and reliance on culture. The first step that distinguished the hominids from apes was upright locomotion.

The oldest members of the genus Homo originated in Africa about 2.5 million years ago. This species is known as Homo habilis (skillful human being) and it had developed a larger brain than the australopithecines and exhibited a greater reliance on culture.

Homo erectus dated to 1.8 million years ago, possessed a larger brain, taller stature and showed changes in facial structures. Originated in Africa, it was the first hominid to spread out of Africa into Eurasia as far as China and Indonesia.

Homo sapiens evolved in Africa about 200,000 years ago from Homo erectus. The general features of this species are similar to those of living peoples except that archaic Homo sapiens was more robust. Modern human beings were living across Africa, Europe, Asia and Australia at about 35,000 years ago. They also spread into America and the Pacific. They lived by gathering and hunting.

About 2.5 million years ago, the earliest human tools were made of stone. They were known as "Oldowan" tools since many of them were found at Olduvai Gorge. These tools have sharp edges but not standard shape. They were used for butchering wild animals, hide working and shaping wood implements.

More complex stone tools of standard shape known as "Acheulean" were made at about 1.5 million years ago. These were hand axes and cleavers flaked on both sides in regular pattern. These tools usually had sharp edges, pointed ends, and were round at the top. They were used for cutting down trees, digging roots, scraping, butchering meat and preparing skin. They continued to be made in Africa, Asia and Europe up to 200,000 years ago.

During the "Middle Stone Age", at about 200,000 years ago, human beings began to make a wide variety of tools that some were hafted as spear points and knives.

Tools called as composite tools appeared during the "Late Stone Age". Artifacts of this period exhibit further reduction in size and are fitted into wood, bone or horn handles.

The domestication of plants and animals began as early as 11,000 years ago in some parts of the world. This development marked the beginning of the Neolithic Revolution and it was one of the most important and revolutionary innovations in the history of human species. Farming activities were introduced and human beings became food producers. These developments led to the emergence of sedentary way of life and permanent settlements, which in turn resulted in the emergence of big communities and bigger societies. Stone houses were built for the communities. Specialized crafts appeared. This was followed by division of labour in the community. In short, the Neolithic Revolution made human beings food produces and community dwellers.

Review Questions

I. Write short notes

1. Trace the development that led to evolutionary theory.
2. What tools did the Homo habilis introduce?
3. List down the sites where fossils of Homo erectus were uncovered in Ethiopia.
4. Explain the basic differences between the Oldowan tools and the Achenlean tools.
5. What were the major revolutionary changes of the Neolithic revolution?