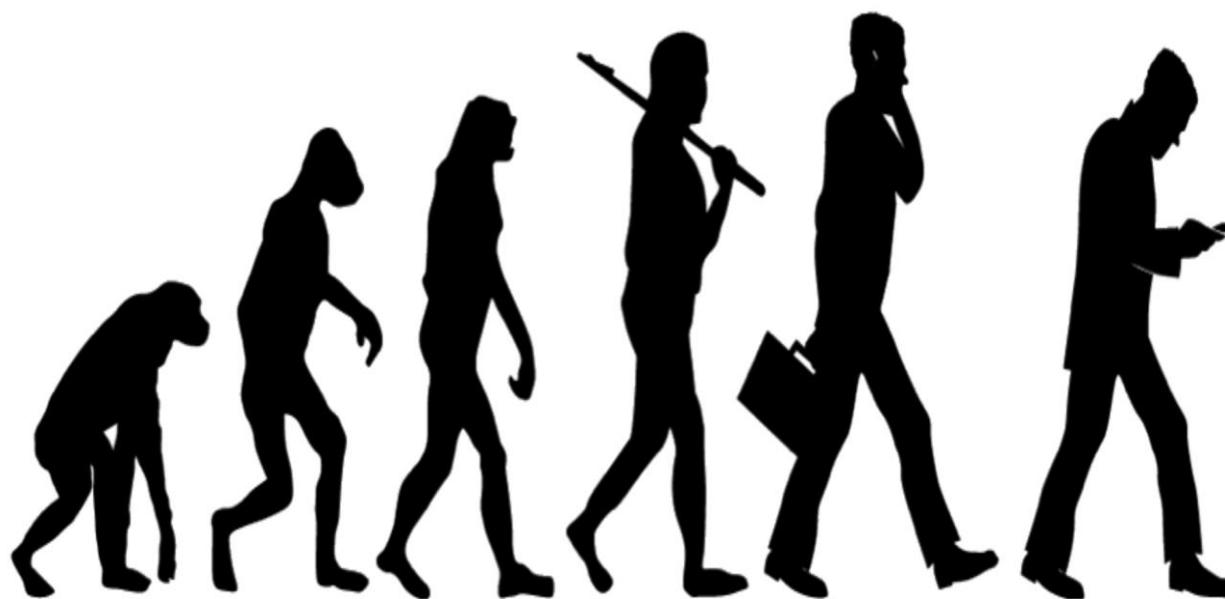


CHAPTER 3

Looking Back at the Human Bio-cultural and Social Evolution



The origins of modern humans can be explained by studying the biological, social, and cultural evolution. Biological evolution explains the physical transformation of modern humans from hominids into thinking modern humans or Homo sapiens sapiens. Aside from biological evolution, modern humans also underwent social and cultural evolution. Humans developed and modified their culture through time as a response to the threats and challenges posed by their environment. The cultural evolution of humans also included the social and political evolution of modern man.

These topics will be discussed in this chapter. The lesson 1 explores the biological and cultural evolution of modern humans from time of the hominids to the development of Homo sapiens sapiens. Lesson 2 centers on the sociocultural evolution of humans from the prehistoric times, when humans subsisted through hunting and gathering, to the development of the agricultural, industrial and post-industrial stages of society.





LESSON 1 - Biological and Cultural Evolutions of Modern Human

At the end of this lesson, you will be able to:

- explain the differences of biological and cultural evolution.
- discuss how modern humans develop culture
- explain the importance of artifacts and fossils in understanding the social, cultural, political and economic processes of modern humans.

LESSON PROPER:

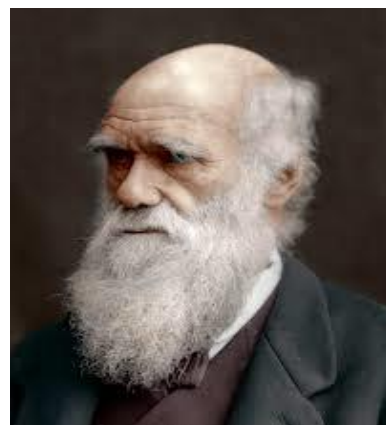
Society as a Concept

Biological and cultural evolutions are key concepts in the study of the origins of modern humans. **Biological evolution** refers to the changes, modifications, and variations in the genetics and inherited traits of biological populations from one generation to another. Evolution is diverse and it occurs in different levels of the biological population. It can occur in the level of species or organisms and even in the molecular level.

In studying biological evolution, scientist study the changes in the physical body of humans, the changes in the shape and size of their bones, brain, dentition, and fingers of instance. Included in the study of biological evolution are the changes in posture, movement, and the development of bipedalism or walking on two feet in an upright position.

Cultural evolution or socio-cultural evolution, on the other hand, refers to the changes or development in cultures from a simple form to a more complex form of human culture. Socio-cultural evolution happens as a result of human adaptation to different factors like climatic changes and population increase. Scientist study the cultural evolution of humans by analyzing the changes in the latter's way of life reflected in the different tools and other human-made objects that they have used.

Biological evolution is based on the theory of evolution that was introduced by the famous English naturalist and geologist **Charles Darwin** (1809-1882). Darwin, after conducting numerous studies regarding the changes that occur among plants, fossil animals and different breeds of pigeons, concluded that each species was not created at one time in a fixed form. Because of the result of the studies, he introduced the concept of evolution to explain the origins of modern humans. In his published work entitled *On the Origin of Species by Means of*



C. DARWIN

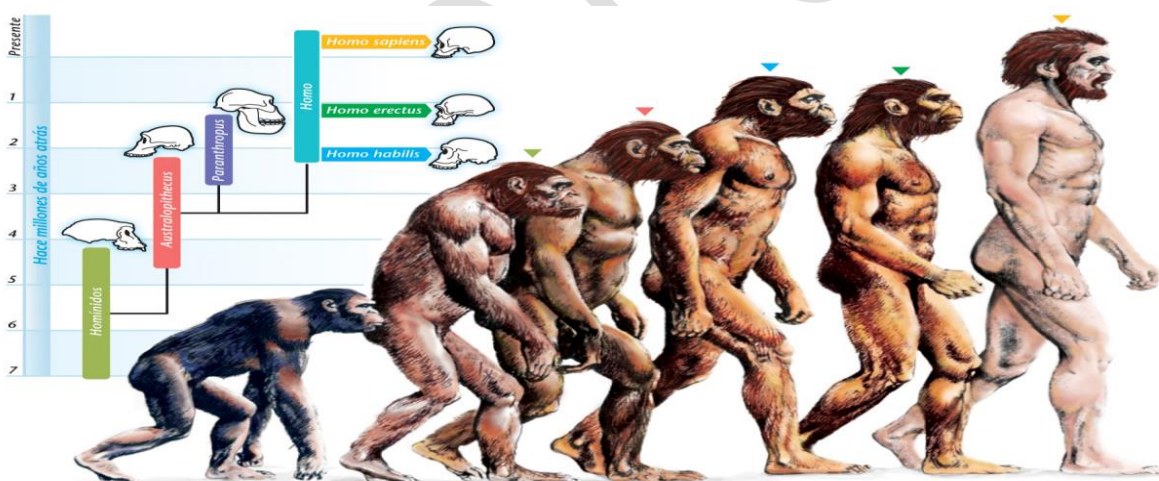


Natural Selection, Darwin wrote: “Species are not immutable, but that those belonging to what are called the same genera are lineal descendants of some other and generally extinct species, in the same manner as the acknowledge varieties of any one species.”

In his study, Darwin hypothesized that the evolution of species happens through the process of natural selection. **Natural Selection**, according to Darwin, was the reason for the occurrence of evolution. It defines as the outcome of processes that affect the frequencies of traits in a particular environment. Traits that enhance survival and reproductive success increase in frequency over time. Natural Selection has three important principles. There are variation, heritability and differential reproductive success.

From Hominids to Homo Sapiens Sapiens: The Biological and Cultural Evolution of Modern Humans

For many generations, scientists believed that the evolution of modern humans follows an evolutionary ladder. This evolutionary ladder illustrates the apelike ancestors of modern humans at the top. The transformation from apelike ancestors to modern humans occurred after millions of years of biological and cultural evolution.



The Evolutionary Ladder of Human

In order to understand the development of humans, archaeologist or social scientists who study the ancient and recent past of humans conduct excavations to search for fossils and artifacts that can provide information about the origins of human. **Fossils** refers to the human, plants and animals remains that have been preserved through time. While **artifacts**, refers to the objects that were made and used by humans.



Hominid is the general term used by scientist to categorize the group of the early humans and other humanlike creatures that can walk erect during the prehistoric times. There are four (4) categories of hominids based on the age of the artifacts and fossils that were found. These are Sahelanthropus, Ardipithecus, Australopithecus and Homo.

The Australopithecus, together with the Sahelanthropus and Ardipithecus, are considered as the prehuman stage of evolution, while the Homo is part of the human stage of evolution. In general, the Sahelanthropus, Australopithecus and Ardipithecus had both apelike and humanlike characteristics. On the other hand, the Homo had biological and cultural characteristics of a modern human.

Fossils of the Sahelanthropus, Australopithecus and Ardipithecus were all excavated in the **Africa continent**. The first Hominid came from the lineage of the **Sahelanthropus Tchadensis** species (6-7 million years ago). It had both apelike and humanlike characteristics: a skull similar to the Australopithecus and modern human; height almost similar with the chimpanzee; brain size of about 320-380 cubic centimeters; small teeth similar to other hominids; and had the ability to walk upright.

On the other hand, **Orrorin Tugenensis** (5.7 million years ago) and the **Ardipithecus** came out. It has two species namely the **Ardipithecus Kadabba** (5.6 million years ago) and the **Ardipithecus Ramidus** (4.4 million years ago). **Ardipithecus** means “ape on the ground” while **ramidus** means “root”. The Ardipithecus had the following characteristics: height of about 4 feet; weight of about 120 pounds; skull size similar to an ape; small brain; biped (walked on two legs or feet); and lived in jungles and forest like the chimpanzee.

The **Australopithecus** or “southern ape” was the next group of hominids. They lived in the African jungle from 5 million to one million years ago. Some of their characteristics include the following: brain size of 500 cubic centimeters; upright; biped; tool users only and not tool makers; used sticks and stones for digging; lived in a small social groups; distance of movement was estimated to be 15 kilometers or more to search for stones to be used as tools; food scavengers; ate insects, egg, plants, fruits, and sometimes meat.

At present, there are six species of the Australopithecus and they are divided into major categories: the **Gracile** and **Robust**. The Gracile Australopithecine had small teeth and jaw. Included in this group are the Australopithecus Anamensis, Australopithecus Afarensis and the Australopithecus Africanus. The Robust Australopithecus group, on the other hand, include the Australopithecus Aethiopicus, Australopithecus Robustus, and the Australopithecus Boisei. These Australopithecines had large teeth and jaws and muscular built.

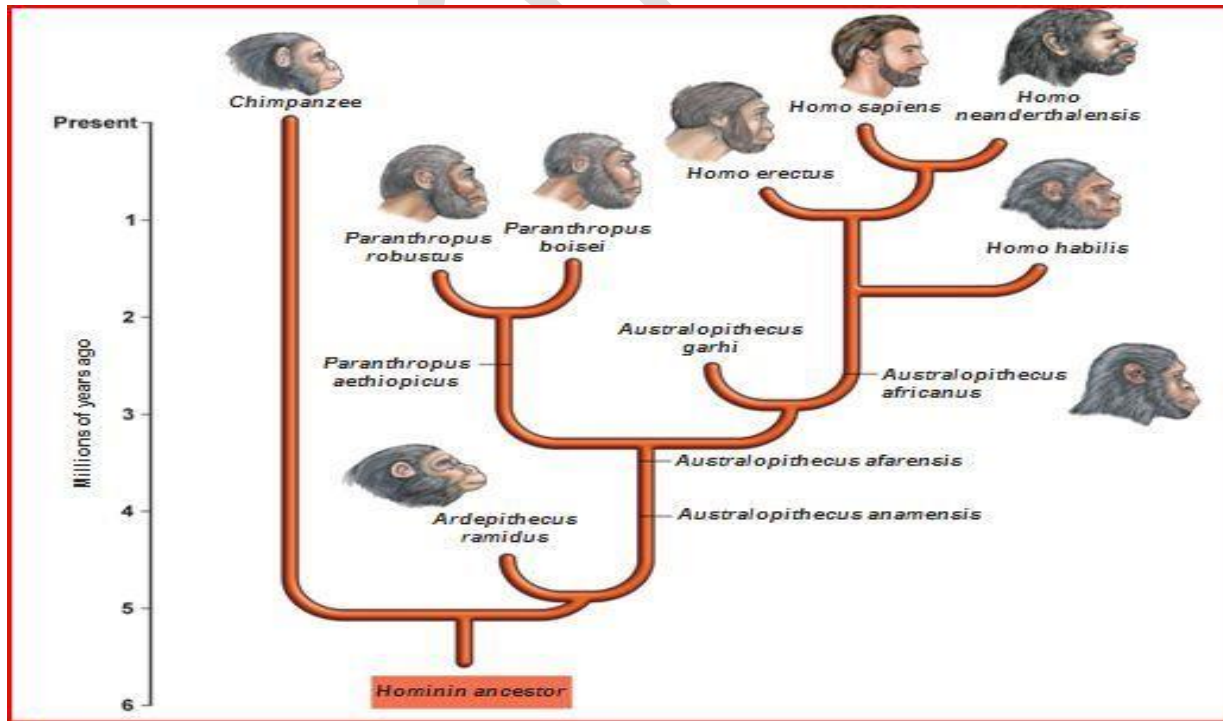




Dr. D. JOHANSON

The Australopithecus Afarensis is considered as the common ancestors of the Australopithecus species, namely the Australopithecus Africanus, Australopithecus Robustus, and Australopithecus Boisei. The 3.2 million-year-old **Australopithecus Afarensis** fossil named “Lucy” was considered as one of modern human’s earliest ancestors and remains as the most famous hominid fossil discovered. Lucy was discovered in **Hadar, Ethiopia** in **November 1974** by palaeontologists led by **Dr. Donald Johanson**.

The Australopithecus disappeared in the evolutionary map after almost one million years. They were replaced by a much intelligent group of hominids that belonged to a new genus- the Homo. The Homo are classified as humans and not humanlike creatures because they had bigger brains and were bipedal. According to fossil evidences, the Homo first lived in Africa about 2.4 million years ago. The Homo species included Homo Habilis (handy man), Homo Erectus (upright man), and Homo Sapiens (wise man).



Timeline of the Development of Hominid



Some scholars believe that on the basis of the evidence, the **Homo Habilis** (handy man) was the direct ancestor of the human because of its ability to produce tools. The Homo Habilis had the following characteristics: height of about 3 to 4 feet, brain size half the size of the modern human (700 cubic centimeters), made tools called **Oldowan** (name came from the place where they were found- in Olduvia George, Tanzania) which were used as cutting tools and made from volcanic stones, and lastly, used tools for hunting and food gathering.

The **Homo Ergaster** (1.8 million years ago) was the next Homo Sapiens to flourish. It was from species where **Homo Erectus** came from. Homo Erectus was estimated to have lived from 1.8 million to 300,000 years ago. It had the following characteristics: brain size of 1,000 cc or about 2/3 of the modern human brain size, height of about 5 feet, and walks upright.

Homo Erectus is believed to be more intelligent and more adaptable compared to the Homo Habilis. The Homo Erectus also manifested cultural evolution because they used their intelligence to invent and develop different technologies to respond their needs. They are known for making complex tools used for digging, cutting, and scraping. They were also famous for making and using hand axe tools for slicing, chopping and digging. Homo Erectus are considered as skilful hunters. Based on the artifacts excavated, the Homo Erectus was the first Homo species to use fire and to live in caves and small houses made of tree branches. It was also believed that Homo Erectus was the first Homo to use spoken language.



E. DUBOIS

Based on the archaeological evidences, the first fossil of the Homo Erectus in Asia was found in the Longgupo Cave in China. It was believed to have lived around 1.9 million years ago. Another evidence of the Homo Erectus was excavated in **Trinil, Java, Indonesia** by **Eugene Dubois**, a Dutch anatomist and geologist, in **1981**. The fossil became known as **Java Man** and it was dated to be 1.8 million years age.

In **1920**, another Homo Erectus skull was excavated in a cave in **Zhoukoudian, China**. This became known as the **Peking Man**. And it was estimated to have lived about 1.1 million to 1 million years ago.



The last genus in the evolution ladder of the Homo family was the Homo Sapiens (thinking man). Included in this species are the Homo Sapiens of Africa, Homo Heidelbergensis, Homo Neanderthalensis and the Homo Sapiens Sapiens. The Homo Sapiens are considered as modern humans. Their physical anatomy is very similar to the modern human being that is why it is considered as the species where all modern humans belong to. The characteristics of the Homo Sapiens include the following: large brain size (1,400 cc) that is almost similar to the brain of modern humans, lived in shelter, food gatherers, ate plants and fruits, hunted animals, learned to gather and cook shellfish (164,000 years ago), used fire, and crafted metals. They were able to make different tools that include fishing tools (e.g. fishing hooks), harpoons, bows and arrows, spear throwers and sewing needles. Homo Sapiens who were the first to develop and use oral language because they have more developed brains and speech organs that they used to communicate effectively in order to work together in groups.

The biological, cultural and social evolution of modern man can be studied through the artifacts and fossils that have been excavated by archaeologists and anthropologists. Artifacts and fossils are important sources of information in the reconstruction of human evolution. **Fossils** refers to preserved human, plants and animal remains. While **artifacts** refers to the objects that were made and used by humans.

It may be difficult for us to have direct access to these artifacts and fossils but there are a lot of museums, historical sites and archaeological sites that we can visit so that we can learn and appreciate the significance of these venues in understanding our biological, cultural and social evolution.

Museums are institutions that are primarily tasked to conserve, communicate and exhibit all materials and nonmaterial heritages of human society.





TRY IT YOURSELF

Editorial Essay and Editorial Cartooning

Write an editorial essay that assesses the important role of museums in educating the public about the human species' bio-cultural and social evolution. See the guidelines in making an editorial essay. See the guidelines in making an editorial. After you create the editorial essay create now the editorial cartooning related to your essay.

How to Write an Editorial!

1. Choose a current issue. For your editorial to be good, it will have to address an issue or topic that is current. Look to television, the internet or newspaper for the biggest daily topics.
2. Take a clear stance on the issue.
3. Use facts to support your beliefs.
4. Think about your audience and try to appeal to them.
5. Be short and to the point!



"Those viewers who disagree with our editorial on TV violence had better keep their big mouths shut!"

Example of Editorial

EDITORIAL

A Misencounter or a Massacre by: Jennifer L. Edroza



Photo by CBCP News

Justice! Truth! Filipinos crave and shout for the 44 elite policemen who were killed in a clash with Moro rebels in Mamasapano. The Filipino masses, including the family of the fallen heroes and the comrades of these 44 SAF members mourn as each has been laid to death. For that, private and government sectors conducted investigations and made different views and conclusions about the said nefarious incident but both of them are aiming of unveiling the truth, for the Filipinos inquisitive minds be answered. Thousands of questions have been thrown to the authorities that are said to be responsible for the killing in order to get leads to solving the cases.

Some said it's a massacre due to the facts that the SAF 44 members were over-killed and were clearly humiliated. Whereas, PINOY stands that it's a misencounter due to lack of coordination with the other government agencies. As the investigation goes on, various versions of stories went aired that confused people - specially the bereaved family of who really are the right trees to bark. The truth

seemed unclear and officials pin point anyone around just to free themselves out from the blames.

To make things clear, a committee is formed reassuring people the transparency of the real incident that happened during the crisis-- The Board of Inquiry. The said committee continues to investigate facts and tries to resolve and give justice to the 44 fallen heroes.

But more than the negative emotions felt by many Filipinos, what really marked to the hearts of the masses were the courage and heroism with which they carried out of their mission. The selfless offering of their lives to our nation cannot be traded with anything else.

Whether its a massacre or a misencounter, it should not be taken for granted how the 44 elites SAF members selflessly fought against the rebels for the nation. This should not be the reason for the Filipino masses to divide instead an inspiration to love and fight for our nation by simply doing our individual roles in the society! SAF 44, you will never be just a number!

