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Survival of Homo Sapiens- A Retrospect Analysis

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Abstract- Our understanding of human evolution is in the form of evidence of available fossil remains based on discoveries made in the last two hundred years. Most of these discoveries are incidental in nature and they do not have the correct serialization and this evidence is not documented in the true sense. In the context of human evolution we discuss the processes under which a pre-human species with a large brain evolved into modern human. In this context, we must pay attention to the known early forms of human beings. Most of them are now extinct and are known only by their fossil remains and material culture. Now, the question arises in front of us whether all humans were direct ancestors of same species or were their sub-sections or sub branching of the lineage in human evolution? Based on the fossil material presently available, we can say that some of them are from the human lineage of evolution. If they were related, then there are some forms of species that existed before hybridization. Genetic groups found today are formed by hybridizing of genetic traits. Homo sapiens were the only ones who have been transformed into modern humans through the process of evolution. Why the species which became extinct despite being homo genus is a question in itself.

Keywords: homo, evolution, fossils remains, prehistoric environment.

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Survival of Homo Sapiens– A Retrospect Analysis

Harashawaradhana [α] and Reya Santra [σ]

Abstract- Our understanding of human evolution is in the form of evidence of available fossil remains based on discoveries made in the last two hundred years. Most of these discoveries are incidental in nature and they do not have the correct serialization and this evidence is not documented in the true sense. In the context of human evolution we discuss the processes under which a pre-human species with a large brain evolved into modern human. In this context, we must pay attention to the known early forms of human beings. Most of them are now extinct and are known only by their fossil remains and material culture. Now, the question arises in front of us whether all humans were direct ancestors of same species or were their sub-sections or sub branching of the lineage in human evolution? Based on the fossil material presently available, we can say that some of them are from the human lineage of evolution. If they were related, then there are some forms of species that existed before hybridization. Genetic groups found today are formed by hybridizing of genetic traits. Homo sapiens were the only ones who have been transformed into modern humans through the process of evolution. Why the species which became extinct despite being homo genus is a question in itself. Even today there are different opinions among the different scholars related to it. It cannot be said that no common theory exist which has been accepted by all the scholars in the field. It is believed that only after the arrival of the genus Homo, the existence of human must be a product of evolutionary forces acting upon the genus Homo; which has evolved into modern humans. This article aims to discuss on the above said question by various secondary sources evidences and the focus of the discussion is why Homo sapiens is the only one facing the various environmental problems and has its existence in the present, while other human species became extinct.

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I. Introduction

Advances in the field of palaeoanthropology in the last one decade have been outstanding in terms of discoveries and shedding new light on the slow but gradual process of evolution which happened over a prolonged period. Traditionally, the earlier endeavors to understand the drive behind human evolution especially the theories and interpretations were restricted to bipedalism, opposable thumb, stereoscopic vision, an enlarged brain. The study of palaeoanthropology is characterized by its multi-disciplinarity. Therefore, understanding the process of evolution has now gone to molecular levels. Following the increased theoretical complexity, the number of key questions has multiplied and now involves a thorough interdisciplinary understanding of the evolution and functions of adaptation, behavior, bipedalism, brain size, chronology, climate, common descent, evolutionary constraints, culture, dispersal and migration, diet, diversity, ecosystems, extinction, genetics, geography, language, lineage, morphology, ontogeny, phylogeny, species concept, technology, and variation. The answer to these questions includes several theoretical assumptions about time, selection pressures and mechanisms, inheritance, speciation, convergence, continuity, and discontinuity. Earlier it was proposed that the earliest stone tools were made and used around 2.6 mya, but a study conducted in Lomekwi, Kenya in dates back to 3.3 mya for the usage of stone tools which were comparatively simple. The stone tools were recovered from Pliocene environmental fossil deposits. Furthermore, a tooth found in Denisova Cave in Siberia carries a mitochondrial genome. The team suggested that this tooth shares no derived morphological features with Neanderthals or modern humans, indicating that Denisovans have an evolutionary history distinct from Neanderthals and modern humans. Most importantly, the discovery of *Homo naledi,* a previously unknown hominin species with comparatively recent dates of 236,000 to 335,000 years in South Africa has put forward a whole new scenario. A 3.8-million-year-old fossil from Afar region of Ethiopia was discovered. Among the most important findings was the team's conclusion that *Australopithecus anamensis* and its descendant species, the well-known Australopithecus afarensis, coexisted for at least 100,000 years. This finding contradicts the long-held notion of an anagenetic relationship between these two taxa, instead of supporting a branching pattern of evolution. The emergence of the modern Homo sapiens was considered to be around 200 thousand years ago (ka) among earlier representatives of H. sapiens. If not can be also said that it evolved gradually over the last 400 thousand years. But newly found human fossils from Morocco with an age of 315 ± 34 thousand years has been found, re-establishing our age in the history of evolution. This evidence makes the oldest and richest African Middle Stone Age hominin site that documented early stages of the *Homo sapiens* clade in which key features of modern morphology were established.

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II. Hominin Evolution

About 30 million years ago, we shared our common ancestor with the Old World monkeys. With the gradual process of evolution, approximately 5 million years ago, the humans and African great apes last shared a common ancestor. It has already been established that humans are more closely related to chimpanzees than gorillas, the parsimonies being limited tool use, broad diet, and cooperative group living. The earliest possible hominin to date is *Sahelanthropus tchadensis* from sub-Saharan Africa, which has tentatively been dated 6 to 7 million years old (Brunet, 2002). Although the fossil remains found suggested the mosaic ape and hominin features, the lack of postcranial skeletal material makes it difficult to suggest whether it was bipedal. Speaking of bipeds, *Orrorin tugenesis* is considered to be the earliest hominin biped because of its human-like femur. Fossil remains of *Orrorin tugenensis* were found discovered from Tugen hills of Kenya, dated to 6 million year's age (Senut et al.2001). Another example of bipedalism can be comprehended from the fossil remains of *Ardipithecus ramidus*, recovered from the Aramis, Ethiopia (Klein, 1999). The forwardly placed foramen magnum and comparatively free upper arms featured from the fossil remains from the site of Aramis point towards bipedalism. It suggests the species was either close or might share the ancestor of humans and modern chimpanzees. *Ardipithecus ramidus* is also considered to be a gracile Australopith. The Autralopiths, are considered to the direct ancestors of humans, as their skeletal remains show features of bipedalism. The Robust australopiths remain show comparatively larger brain size than that of the gracile ones, which is around 400 to 500 cc. The robust variety also had a large bony chest and jaw muscle attachments. Comprehensive phylogenetic analyses typically position *Australopithecus africanus* basal to a clade that unites *Homo* and robust australopiths (Paranthropus). South African *Australopithecus sediba* (approx. 2.0 Ma) has also been claimed to have a direct ancestor to Homo, possibly even to Homo erectus, but is more plausibly considered a close relative of *Australopithecus africanus* (transition ref). The archaic humans from Africa between 2.4 to 1.5 mya are considered as *Homo*, with smaller teeth and jaws than the Australopiths and comparatively taller. The appearance of the large-brained later *Homo* happened around 100,000 years ago. Although the evidence of early entry of people in parts of Europe, in an intermediate form between *Homo erectus* and *Homo heidelbergensis* was discovered as *Homo antecessor*, around 700,000 and 600,000 years ago. Again from most of Europe (excluding Scandinavia) and southwestern and western Asia, pieces of evidence of another later *Homo* was discovered, the *Homo neanderthalensis*, around 250,000 and 29,000 years old. The analysis of mitochondrial DNA (mtDNA) recovered from Neanderthal bones and compared to mtDNA of living *Homo sapiens* supports the conclusion that *Homo neanderthalensis* was a distinct species from modern humans (Krings et al., 1997; Ovchinnikov et al, 2000).

About 2.5 million years ago, when large parts of the Earth were covered with snow due to polar glaciers, the climate and vegetation conditions changed drastically. The forests were reduced and the initial forms of Australopithecus used to live in the forests were lost and in their place, another species emerged which included the oldest representatives of Homo. This period can now be considered to be about 20 lac years old fossils remains that have been obtained from sites, do not appear to be more than eight million years old. Thus it is clear that the evolution of the early humans occurred in the midst of a difficult climate with unprecedented fluctuations in the ice age. The genus Homo may have many species, but the particular species sapiens is the wisest form of human species. There are other species of Homo genus that are also extinct. All those pre human species were very similar to humans, so they were kept in Homo. But there are some morphological and cultural difference in humans due to which they are different from other human species. Some remains of human, who looked very much like monkey, is called Java Man or Homo erectus javanesis, and Heidelberg man. The remains of the first species were found in Asia, while the remains of the second were obtained from Europe. Therefore, it is difficult to tell where the evolution of human took place. Although, the evolution of the genus of humans had been done long ago, modern humans probably evolved from Neanderthal man because this species is most closely related to modern humans. Human evolution is possible from Neanderthals; it was probably from Heidelberg that the branch of development started. Eonthopus and Neanderthal fossils are believed to have existed on Earth as late as about 50 thousand years ago, there were other possible humans species coexisting at the same time, but after that the earth became cold due to the Ice Age and Neanderthal lived in caves and began to receive heat from fire but other human species probably could not tolerate the environmental constraints that arises with severe cold. However these constraints did end with the development of Homo sapiens, Neanderthal, Denisovans, Homo floresiensis, and modern humans on Earth, was the genus of Homo, and these subgroup had better survival than other human species. Homo genus have different species which have been classified in different ways on the basis of their origin and proximity to modern humans, but with a broad consensus Chris Stringer, in his article published in Nature (2012), divided the total of the genus Homo into eight ethnic categories in his hypothesis.

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Homo genus

- *Homo habilis*
- *Homo erectus*
- *Homo naledi*
- *Homo sapiens neanderthalensis*
- *Homo rudolfensis*
- *Denisovans*
- *Homo floresiensis*
- *Homo sapiens*

In modern taxonomy, Homo sapiens are the only living species of its genus. However, the genesis of Homo sapiens is in progress, studies have shown that there were other Homo species, all of which are now extinct. Although some of these other species may have been ancestors of Homo sapiens, many were cousins, presuming to be far from our ancestral line. There is not yet a common consensus as to which of these groups should be counted as separate species and which other species as subspecies. In some cases, this is due to the lack of fossils; In other cases, Homo sapiens is due to the slight differences used to classify species in the genus. First of all we will discuss about these other species of Homo genus.

Homo habilis: *Homo habilis*, derived from the Latin words "homo" (man) and "habilis" (skilled), was a hominid ancestor of Homo sapiens. It is popularly known as the "Handy man ". This species of humans has its origins in Africa, where it lived from about 2.6 million years to 1.6 million years ago. At the time of its discovery, *Homo habilis* was the first known species of the genus Homo. The explorers of the first remains of *Homo habilis* were the British paleontologist Louis Leakey and his wife, Mary Leakey. When Leakey made his campaign, it was thought that the line of development towards human development was very simple. Thus, it begins with Australopithecus and reflects Homo erectus and later, Neanderthals and finally, Homo sapiens with an equivalent. Researchers concluded that the remains found belonged to a new species in the genus "Homo", as this species has some characteristics that were concurrent to modern humans. However, it differed with its later species because of its cranial capacity as it was very small. It was believed that *Homo habilis* and erectus came from each other. However, the findings in 2007 have opened up debate on the subject. Interestingly, the authors of the new discovery were Louis and Mary Leakey who indicates that *Homo habilis* lived longer than before. This means that, for about 500,000 years, this species coexisted with *Homo erectus*. This, for some scientists, raised doubts about the fragmentation between the two species. However, others want to maintain that Homo erectus came after *Homo habilis*. It is generally mentioned in the context of their extinction that Homo erectus was in a mutual battle of resources and that it replaced *Homo habilis* and brought itself into existence. The main comparative feature of *Homo habilis* has been that its increase in cranial capacity and skull size as well as the decrease in number of its teeth has been observed which seems to be similar to modern humans.

These fossils have been said in the science journal Nature that this upper jaw part and the connected brain are of like -human beings. It has been believed that human development has been previously known from *Homo habilis* (human beings) to *Homo erectus* (upright walking posture) has evolved which made humans today. But with new fossils, it seems that *Homo erectus* and *Homo habilis* were at the same time, so it is clear that Homo erectus did not develop from *Homo habilis*, which is quite contrary to the common concept. Professor Mary Leakey of the Koobi Fora Research Project, associated with the study of new fossils, says the jaw appears to be of *Homo habilis* while the brain appears to be of Homo erectus. But both fossils appear to be of the same time. These fossils have been found in the Turkana Basin region of Kenya. On the basis of new fossils, scientists say that in the coming days it may be clear that Homo sapiens means that today humans have evolved from Homo erectus and these Homo erectus may have must have lived with *Homo habilis* and not evolved from *Homo habilis*.

Homo ergaster: It was a hominid that appeared in the African continent about 2 million years ago. Since the discovery of the first fossil there has been a major controversy among experts. Some believe that ergaster and *Homo erectus* are actually the same species, while others claim they are different. The currently prevalent theory is that *Homo Ergaster* was the direct predecessor of Homo erectus. Since it is believed to be the first hominid to leave Africa, *Homo ergaster* and Homo erectus have been named for their descendants in other regions of the planet. The anatomy of *Homo ergaster* represents an evolutionary process over previous species. Studies from the remains of *Homo Ergaster* are considered by the experts to be the successors of *Homo habilis*. On the other hand, many authors describe it as the ancestor of *Homo erectus*. So far, there is no consensus on this matter, as many paleontologists believe that both must have been the same species. The first conclusion of *Homo ergaster* was obtained in 1975 from Koobi Fora (Kenya). One expedition found two skulls, one possibly female, KNM-ER3733, and another male, KNM-ER3883. The dating of the remains revealed that they were 1.75 million years old. However, the most significant discovery was in 1984 in Lake Turkana, Kenya where the skeleton of a boy around 11 years of age was discovered. Known as "Turkana Child", it allowed a detailed study of the anatomy of this species. *Homo ergaster* inhabited the earth during the Middle Pleistocene, between 1.9 and

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1.4 million years ago. The deposits so far suggest that they were inhabiting areas of Ethiopia, Kenya, Tanzania and Eritrea.

In that region, the climate at that time was very dry, in which there was a drought for nearly one lakh years. Scholars also believed that drying out may have been the main reason for their extinction. *Homo ergaster* was marked by an elevated nose, similar to sapiens. While the jaw and teeth were smaller than those of *Homo habilis*, which gives it a more present appearance of human beings.

Homo erectus: Homo erectus means 'straight man', an extinct species of hominid that existed during most of the Pleistocene geological era. The earliest fossil evidence of this is found 19 million years ago and the most recent 70,000 years ago. Homo erectus is generally believed to have originated in Africa and they are migrating across Eurasia to remote Georgia, India, Sri Lanka, China, and Indonesia. Its discovery and laziness behind the disappearance is quite interesting. Anthropologists believe that they were very familiar with use of fire and were socially more modern than their former species. However, even today its genesis lineage related to this species, their development and extinction Research is going on.

A recent study in Melbourne has revealed that the extinct human species Homo erectus ceased to exist due to laziness and not being able to adapt to the changing climate. It has been claimed in a study. During archaeological excavations conducted to collect information on ancient human populations in the Arabian Peninsula during the Paleolithic period, it was found that Homo erectus adopted "very little effort" in making tools and gathering resources. Carrie Shippton of the Australian National University (ANU) said, "It seems that he was not a hard worker." Shippton said, "I don't think he'll be too much of an explorer. He did not have the sense to wonder what we have. "

Homo rudolfensis: Samples from Olduvai Gorge, East Lake Turkana, and Lake Malawi were included in this study. The East Lake Turkana fossils available prior to 2010 were examined first-hand, while for the Olduvai and Lake Malawi fossils and KNM-ER 60000, 62000, and 62003 we relied on original observations on fossils and casts as well as published reports (Schrenk et al., 1993; Blumenschine et al., 2003; Leakey et al., 2012). We do recognize that KNM-ER 60000 and KNM-ER 1802 present some conflicting anatomy that some authors have argued precludes them as conspecific specimens (Leakey et al., 2012); by considering both, we aim to be conservative as they encompass more variation within H. rudolfensis.

Homo sapiens neanderthalensis: Neanderthal is an extinct member of the Homo Genus. It is classified as a subspecies of humans. In 1856, a human fossil was found in a place called Johanne Karle Fuhlrotee, named Neanderthal Human. About 100 such fossils were later found in other parts of the world (France, Belgium, Italy, Rhodesia, Central Asia, China and Japan), it is believed that it lived about 1, 60,000 years ago. Although there is no longer any doubt about Neanderthal being human, as some of the characteristics of this species are such that the jaws and eyebrows were raised (though the teeth are almost human alike) and lacked chin. It also had some qualities which are not found by the present man, such as 1,600 cubic cm of the volume of cranial capacity. (Greater than humans) and the dental cavity is very large. Not only this, its limb bones were thick, crooked and unformed, which makes it feel like stuttering. Therefore, on one hand, while there were many human qualities in it, but on the other hand there were many big differences. Therefore, Neanderthal can be considered a human being only an ardent subdivision of the main branch of human development. The non-discovery of the remains of this human in the last ice age indicates that they were either destroyed on the arrival of humans, or merged into their family by hybridization.

They found that the species went extinct because their eyes were larger than those of existing humans. These eyes were adapted to look far in the long black nights of Europe, but they to pay the price of these big eyes by abandoning the high level thoughtful mind. On the other hand, the human species Homo sapiens had a better and bigger brain, with the help of which they made warm clothes and formed societies with which they could survive in the ice age of Europe. A study published in the Royal Society of Journal about this study mentions that Neanderthal was a very similar species to humans that lived in Europe around 2,50,000 years ago, our species of man and Neanderthal was once in Europe where they living and getting to know each other, they are almost 28,000 years ago, this species became extinct due to the ice age. Researchers have traditionally believed that Neanderthal's ancestors came from Africa and their eyes grew larger to see Europe's long black nights and misty days, and the part of the brain that controls vision would be large. The various Researchers also believe that their ancestors were living in Africa, they were enjoying the sailboat days there through the light and they did not need big eyes. The same humans living in Africa were also our ancestors and their minds developed. And only then did they spread all over the world.

Aylina Pierce found that the Neanderthal eye was quite large, about 6 mm in height. For a long time, this length does not seem to be very large, but because of this Neanderthal was able to better assess the visible scene. Due to his mind being visual based, his body must have been under control, and he could understand the things he saw well. But because of that, some parts of his brain could not develop and give better thinking. Doing similar research at the Natural History Museum in

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London. Chris, Stringer, on Aylina Pierce's gives consensus to it. It is said that we can feel that Neanderthals might have been reduced due to the small part of the brain's thinking parts, as well as they would not have been able to form big groups because a settled mind is necessary to do all this.

Archaeological evidence suggests that Homo sapiens living with Neanderthals had needles from which they were sewing clothes. Stringer says that Homo sapiens remained because of such small things. In many Hollywood films, Neanderthal has been described as very animalistic and cruel. Doctor Robin Denver, associated with this study, said "Neanderthal was not so bad just he was not as intelligent as Homo sapiens". The difference was that he was just against them in the ice age. The research done on monkeys suggests that the size of the eyes is equal to the portion of the brain that is used to assess things. Researchers are assuming that this will be true even in the case of Neanderthal.

Denisovans: In 2010, scientists announced the discovery of a bone fragment of a teenage woman found in Denisova cave in the Altai Mountains of Siberia, since its discovery that it was believed that the Neanderthal and modern humans may have settled in one place. The link of this species exhibits mitochondrial DNA differences derived from modern humans and Neanderthal as well as from their bones. The DNA genome of this specimen suggests that the Denisovans shared a common origin with the Neanderthals, that they range from Siberia to Southeast Asia, and that they lived among the ancestors of some modern humans. This cave was originally discovered in the 1970s by the Russian paleontologist Nikolai Ovodov.

Homo floresiensis: News of the discovery by archaeologists on the world sensation Indonesian was spread in the island of Flores in 2003. The fossil was named Celiang Bua was first found in this natural cave, which came to be known as the ancient dwarf species. This new type of species has since come to be known as *Homo floresiensis*. Researchers have here obtained the skeleton of a woman whose facial texture was much smaller than other body parts. According to experts, the possible age of this woman was considered to be eighteen thousand years. A new step in this direction was taken in 2012 in the cave of Liang-Bois. Dr. Syuzen Heyz, an Australian scholar, attempted to reconstruct the face from fragments from the skeletons of this species using a method applied in forensic medicine but they failed, but after research done by a team of researchers from New York, after analyzing the skull of this species with the help of computer, a general conclusion was reached. Floresiensis was an off shoot of Homo sapiens, In reference to their extinction, anthropologists are arguing that the hobbits, these *Homo floresiensis*, are our ancestors, or that they were another small species of people living on our planet. Or if they are normal prehistoric people, suffering from a disease that does not allow them to grow up? For example, microcephaly, a disease in which the brain remains small and underdeveloped. *Homo floresiensis*, a friable form of primitive mankind was discovered from the Island of Flores. But due to the rise of sea level there, a shortage of food resources caused their dwarfness and extinction.

Homo naledi: Fossil hominins were first recognized in the Dinaledi Chamber in the Rising Star cave system in October 2013. The fossil assemblage attributed to Homo naledi from the Rising Star Cave in the Cradle of Humankind, UNESCO World Heritage Area, South Africa (CoH) (Berger et al., 2015), represents one of the richest and most unusual taphonomic assemblages yet discovered in the hominin fossil record (Dirks et al., 2015). The remains are exceptionally well preserved and represent the largest collection of fossils from a single primitive hominin species ever discovered in Africa. Although it contains an unprecedented wealth of anatomical information, the Dinaledi deposit remains undated (Dirks et al., 2015). Considering that H. naledi is a morphologically primitive species within our genus, an age may help elucidate the ecological circumstances within which Homo arose and diversified. If the fossils prove to be substantially older than 2 million years, H. naledi would be the earliest example of our genus that is more than a single isolated fragment. The sample would illustrate a model for the relation of adaptive features of the cranium, dentition and post cranium during a critical time interval that is underrepresented by fossil evidence of comparable completeness. A date younger than 1 million years ago would demonstrate the coexistence of multiple Homo morphs in Africa, including this small-brained form, into the later periods of human evolution.

The fossil record of early Homo and Homo-like australopiths has rapidly increased during the last 15 years, and this accumulating evidence has changed our perspective on the rise of our genus. Many skeletal and behavioral features observed to separate later Homo from earlier hominins were formerly argued to have arisen as a single adaptive package, including increased brain size, tool manipulation, increased body size, smaller dentition, and greater commitment to terrestrial long-distance walking or running (Wood and Collard, 1999; Hawks et al., 2000). But we now recognize that such features appeared in different combinations in different fossil samples (Anton et al., 2014). The Dmanisi postcranial sample (Lordkipanidze et al., 2007) and additional cranial remains of H. erectus from Dmanisi (Gabunia et al., 2000; Vekua et al., 2002; Lordkipanidze et al., 2013) and East Africa (Spoor et al., 2007; Leakey et al., 2012), demonstrate that larger brain size and body size did not arise synchronously with improved locomotor efficiency and adaptations to long-

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distance walking or running in H. erectus (Holliday, 2012; Anton et al., 2014´).

Recently Antoine Balzeau from the National Natural History Museum in Paris, together with Philip Charlier of the University of Paleontologist Paris Descartes, re-examined the Hobbit skull, carefully studied high-resolution bone tissue and connecting Homo flapiensis with Homo sapiens but similarities were found among them. Scientists have also not found traces of genetic diseases that will cause pathological low growth. So, according to Balzou and Charlie, hobbits are not humans, nor animals. So who are they? According to current researchers, the "half-ears" are descendants of Homo erectus, which have diminished greatly during the island's habitat. There is a mutual disagreement about this species, on which research work is still going on.

Homo genus has been the highest species in the genus Homo which has survived through adaptation with the natural selection better than other species of the genus Homo. Anthropologists have come to the conclusion that different forms of humans must have evolved in different parts of the world, but the constant movement has united the entire human race in many parts. The oldest humans have evolved in modern East and Southern Africa by one estimate. This is because one of the oldest fossils of humans (fossils) has been found in Ethiopia. These anthropologists have named it as Australopithecus and Homo sapiens is said to be evolved from this particular species. Modern human beings had some qualities or traits, due to which, by defeating the other species they advanced themselves into the mainstream of progressive development. The persistence of such a species like Homo naledi with clear adaptations for manipulation and grip, alongside humans or perhaps even alongside modern humans, would challenge many assumptions about the development of the archaeological record in Africa. The depth of evidence of Homo naledi may provide a perspective on the variation to be expected within fossil hominin taxa (Lordkipanidze et al., 2013; Bermudez de Castro et al., 2014).

Resolving the phylogenetic placement of Homo naledi will require both postcranial and craniodental evidence to be integrated together. Such integration poses a challenge because of the poor representation of several key species both within and outside of Homo, most notably H. habilis, for which postcranial evidence is slight, and Homo rudolfensis for which no associated postcranial remains are known. We propose the testable hypothesis that the common ancestor of Homo naledi, Homo erectus, and Homo sapiens shared humanlike manipulatory capabilities and terrestrial bipedality, with hands and feet like Homo naledi, an australopith-like pelvis and the H. erectus like aspects of cranial morphology that are found in Homo naledi. Enlarged brain size was evidently not a necessary prerequisite for the generally human-like aspects of manipulatory, locomotor, and masticatory morphology of Homo naledi (Berger R L. et.al, 2015).

The special qualities which encouraged the development of man are the following;

Developed brain: In the journey from Homo sapiens to modern humans, the size of the human brain has reduced by about 10 percent. That is, the size of the mind of 1500 cubic centimeters has now reduced to 1359 cubic centimeters. The brain of women is smaller than that of men and the size of their brain has decreased as well. Scientists have come to this conclusion after investigating the remains of human skulls found in Europe, the Middle East and Asia. However, other scientists do not consider the shrinking of the brain as more surprising. According to them, the bigger and stronger we are, the more brains will be needed to control our body. Whereas the human being before the modern man i.e., Neanderthal man died about 30 thousand years ago due to unknown reasons. Neanderthal humans were much larger in size than modern humans and their brains were also larger. About 17000 years ago, the species of human was known as Cro Magnon who made paintings of great animals in the caves and his mind was the largest of all species of Homo sapiens. Cro Magnon was also more powerful than his later generation. David Geyer, a professor of psychology at the University of Missouri, says that these characteristics were necessary to protect him against environmental hazards. They have studied the development in the skulls of a human from 19 lakh years to 10 thousand years old. Everyone knows that our ancestors had to live in a very complex social environment. Geyer and his colleagues noticed during their research that as the population increased, the size of the brain decreased. "With the emergence of a complex society, the size of the mind of the human being became smaller because then the person did not need to struggle much for life and he had learned to live," says Professor Geyer. However, according to scientists, this development does not mean that man has become stupid but he has learned easy ways to live by developing intelligence. Professor Brian Hare of Duke University explained, "Even chimpanzees had larger brains, similarly dogs have smaller brains than wolves but are smarter, flexible, and smarter, clearly indicates that brain sizes does not Prudence decide. "

Standing and walking: Although some large people also often stand up, but by nature it is only human to stand up. As a result of this quality, human hands become free for other tasks. The structure and position of his bones changed in the position of internal organs for standing and walking. Significant changes occurred in the bones of the foot. The thumb came in line with the other fingers and the legs arched and gained special ability to walk and run on the ground. These qualities proved to be

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particularly helpful in man's safety and ability to find food.

Stereoscopic Vision: The movement of the eyes like old monkeys on the face to the front had started like Tarsier, but it was fully developed in humans. By this, they can not only see same image of both the eyes by focusing on the same object, but can also discuss its three dimensional view. Through this special vision, they are able to estimate the distance and size of the object and can see to a greater distance and size of the object and he can see even more far.

Opposable Thumb: Opposable thumb means to bring the thumb in the unfavorable position of other fingers. In this case, the thumb is able to come in front of other fingers and hold it together in objects. This quality started in the animal group only in the primates, by bringing the mouth of the objects to test and it developed so much in humans that today man's hand has become a very sensitive device. With the help of such a hand, man has been able to work his mental powers to become the most talented creature of the universe. To say that only the front limb has contributed to the enrichment of the human mind, exaggeration will occur.

In this way, the first change in the direction of development was made in human beings to stand upright on the first legs and to hold things well with the second hands. The change in hand may have encouraged him to make tools, and the tools may have instilled in him the sense of attacking, or protecting himself. The achievement of the external means of attack would have resulted in the degeneration of its invading organs (teeth, jaws, and the associated facial or neck muscles) and features in the hands themselves. When the hand is more functional, brain augmentation must have occurred naturally. In short, there would have been four main steps in human development: first brain development, second legs, third hands and fourth stereoscopic vision.

Extinction of the genus homo: In this context, Darwin's interpretation of the principle of natural selection becomes important. In which it has been said that the creature which adapts itself to its environmental conditions will exist on earth and the creature which cannot achieve this adaptation becomes non-existent. This theory provides the outline of the theory of development and provides an opportunity to understand the development of any creature. Environmental factors were also helpful in the extinction of the genus Homo. It has also been confirmed that the environmental factor is responsible for the development of Homo sapiens to some extent and the extinction of other species of the genus Homo. Which were caused by extinction of other species of the genus Homo?

Environmental Factors: Most scholars agreed that the main cause of extinction of the genus Homo was the change in physical traits along with environmental changes. The fluctuations of the seasons affected the genus Homo. The ice age and drought and lack of resources have caused the most of the damage. In this context, it is said that in the savanna it was said that the hominids living in the savanna used to live on the trees first, but as soon as the land changed from forest to savanna (ground part of the grass), it descended from the tree and started walking on the ground. Now the hominid who was able to walk remained in existence and the creature which could not establish adaptation accordingly died. Genetic diseases caused by some species found in some species were also caused by their decline, which has been mentioned above.

Studies in cognitive anthropology suggests that early-emerging cooperative communicative skills are responsible for unique features of human cognition and that our psychology evolved in large part due to selection for prosociality (i.e., positive but potentially selfishly motivated acts as opposed to antisocial interactions; Eisenberg et al. 1983). Comparisons of mentalizing skills between apes reveal that among apes, only human infants develop cooperative communicative skills that facilitate human forms of cultural cognition; however, domestic dogs possess some social skills that resemble those seen in human infants. Research with experimentally domesticated foxes and bonobos shows how selection for prosociality can lead to increases in the cooperative-communicative flexibility observed in dogs and infants. This comparative developmental work provides the basis for the self-domestication hypothesis, which proposes that unique human psychology evolved as part of a larger domestication syndrome that converges with other domesticated animals. Researchers have frequently made use of the concept of domestication in explaining human evolution (Boas 1911, Gould 1977, Leach 2003, Wrangham 2014). Darwin (1859) began On the Origin of Species with a discussion of domestication through artificial selection and spent decades collecting examples of natural variation produced through domestication (Darwin 1868). Domestication was crucial to Darwin's case for evolution through natural selection and led him to consider the possibility of human domestication (Darwin 1871). Considering the contemporary humans and their response to the experience of natural selection, Byars (2009) is of the opinion that selection varied in intensity, becoming generally less intense over time, but not in direction, and it has only operated consistently over the entire period to reduce age at first birth. Predictions for one generation are fairly reliable, but whether selection will be consistent and sustained enough to bring about significant genetic change can only be answered with longer periods of observation of more traits relevant to human health. These results suggest slow evolutionary change. Because fertility is the driving force behind evolution in modern populations, we might have found

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larger effects of evolution on the levels of sex hormones and related traits had they been measured. The impact of fertility on selection could prove especially important now that many couples that would otherwise remain childless can produce offspring with medical assistance.

In conclusion, it can be said that Homo sapiens of the genus Homo was the only species that could contend with nature and fight for its survival, only two possibilities are there for their death of other species of human. one that at that time some pandemic disease spread over their area so they all other diminish another reason may be that some asteroid might has hit the earth which may cause earthquake in their area so that all that dead . Out of these nature calamities only Homo sapiens survived because they are best fit in these conditions with their structure and way of living. It is belief that overall seen this possibilities first one is more suitable reason for extinction of other species and As they do not come in contact of virus or disease by virtue of their fate or having to understand better way of their life because if some steroid shot hit the earth than all species has to die simultaneously with but only survivor is homo Sapiens as well as some physical symptoms that caused any kind of blocking of the developmental process did not happen however, there are still ongoing researches on the extinction of genus species, their forests, development and expansion.

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