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LUCY &
THE
LEAKEYS

BIOGRAPHY

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BIG HISTORY PROJECT

LUCY & THE LEAKEYS

HOMININE FOSSILS AND
PALEOARCHAEOLOGISTS

Lucy

c. 3.2 MYA
Afar, Ethiopia

Louis Leakey

Born
August 7, 1903
Kabete, Kenya

Died
October 1, 1972
London, England

Mary Leakey

Born
February 6, 1913
London, England

Died
December 9, 1996
Nairobi, Kenya

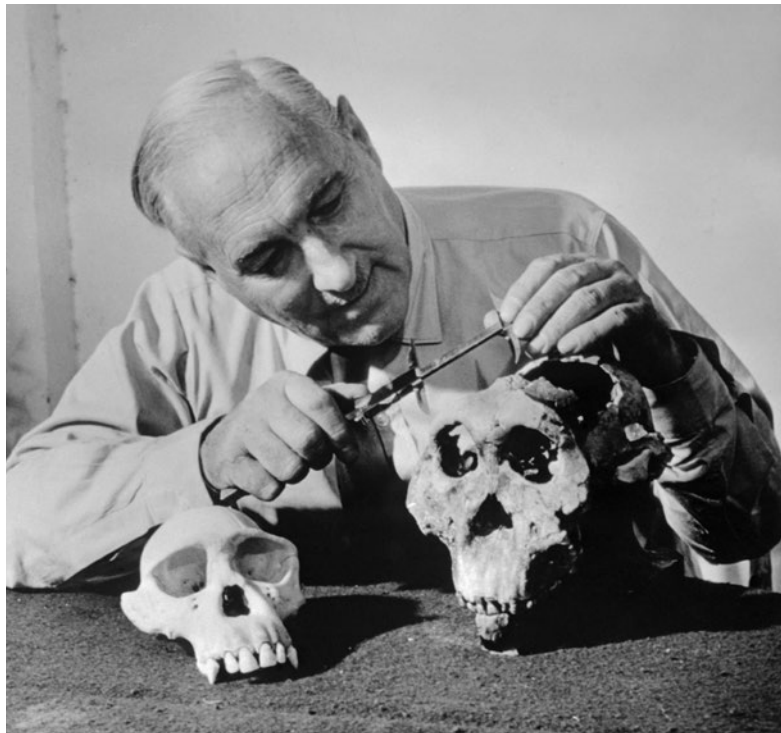
By Cynthia Stokes Brown, adapted by Newsela

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Human origins

Most scientists agree that humans emerged in Africa about 200,000 years ago. Scientists believe this because fossilized bones and skulls were uncovered in East Africa. Ash from volcanoes was found near the bones. By testing the ash, scientists could tell their ages. The bones and skulls range from 25,000 to 4.4 million years old. They show many different stages of human and primate evolution. Paleoarchaeologists uncovered the fossils. These scientists study the remains of humans throughout evolution.

Based on the fossil evidence, paleoarchaeologists tell this story: For 99.9 percent of our history, humans and chimpanzees shared the same line. Even from the time of the first living cell, humans and chimps were part of the



Louis Leakey measures an ancient skull found in Tanzania

same line. Then, about 5 to 7 million years ago, a new line split off from the chimpanzees. The new group lived in open savanna rather than in rain forest jungle. The old group in the rain forest continued to evolve. Two of its species still exist: the common chimpanzee and the bonobo.

The new group in the savanna evolved over thousands of years. It formed into several species. It's unclear how many, but we know of at least 18. Finally, only one was left: humans, or *Homo sapiens*. All the species before us back to our common ancestor with chimpanzees are now called "hominins." They used to be called "hominids."

Try visualizing it like this. Imagine your mother holding hands with her mother. She holds hands with her mother. Imagine this chain continuing. Go back in time 5 million years. The final hand would belong to an unknown kind of ape, sometimes called the "missing link." His descendants evolved into chimpanzees, bonobos, and, ultimately, your mother. If each generation averaged 14 years, there would be about 360,000 hominins holding hands.

Paleoarchaeologists have to decide which bones belong to separate species. They mostly agree on three main categories of species before *Homo sapiens*. The oldest was *Australopithecus* who lived 2 to 4 million years ago. *Homo habilis* lived 1.8 to 2.5 million years ago. The closest to our times was *Homo erectus* who lived 2 to 4 million years ago. Clearly, some of these species lived at the same time.

What scientists now know took many years to figure out. The first early human fossil bones were found in Europe. Neanderthal bones were discovered in Germany in 1857 and Cro-Magnon bones in France in 1868. Java Man was found in Indonesia in 1894.

Most paleoarchaeologists in the 1920s and '30s were certain that *Homo sapiens* evolved in Europe. The other possibility was Asia, since a group of fossils known as Peking Man was found in China in 1923 — 1927. Africa was not considered a possibility. Racist thinking was common among scientists then. Africa was widely known as the "Dark Continent." The ignorance of the time ruled out Africa in scientists' minds.

The Leakeys look to Africa

When did anyone start looking in Africa for hominine fossils? One German professor found a *Homo sapiens* skeleton in 1913 in Tanzania. Then in 1924, a South African professor found a child's skull there. But archaeologists didn't believe these bones were meaningful. The first discovery that scientists took seriously was made by an English couple, Louis and Mary Leakey.

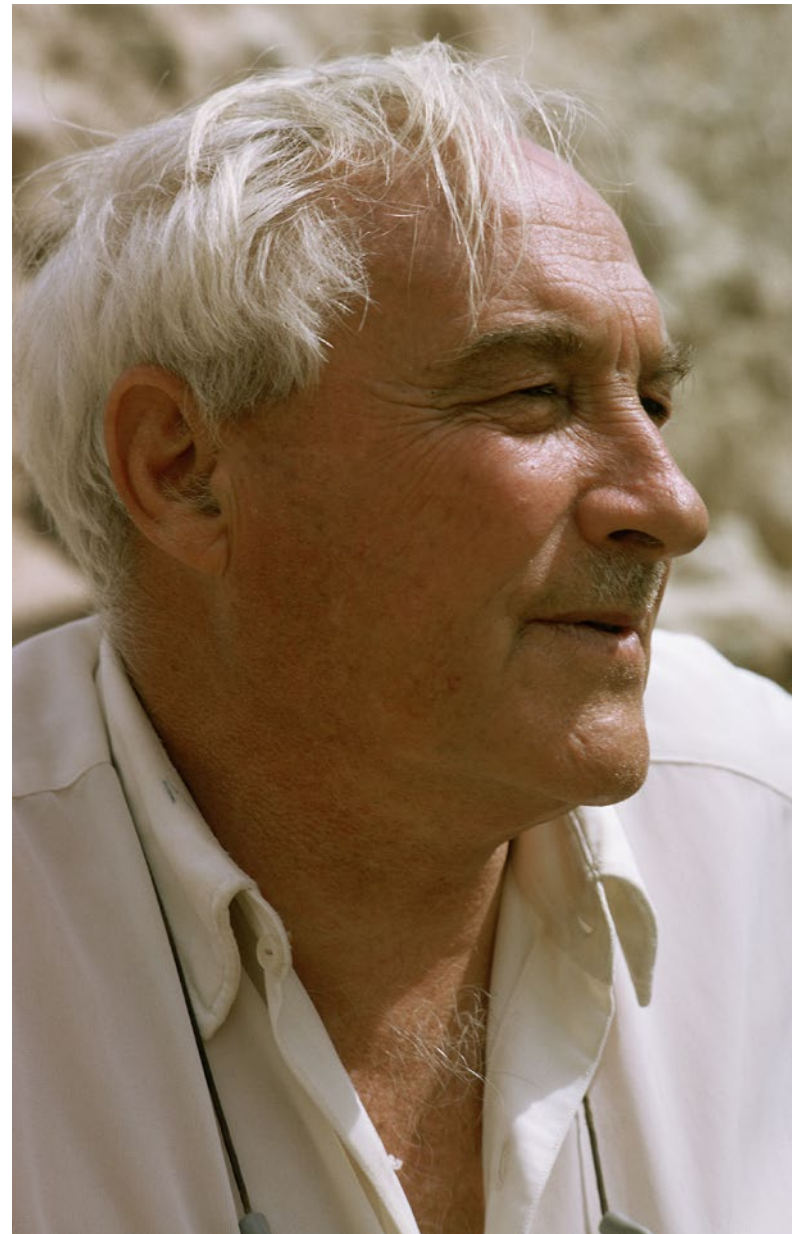
Louis Leakey was born and grew up in Kenya. Louis's parents were missionaries from England. Louis spent much of his childhood hunting and trapping with the local Kikuyu boys. He spoke Kikuyu as a native language. As a child, he went through ceremonies with other Kikuyu. At the age of 13, Louis built his own house, as was Kikuyu custom. He also found some ancient hand axes. At 16, he traveled to London to enter Cambridge University and become an archaeologist.

Mary Nicol grew up in England. Each year her father took the family traveling, mostly to southern France. He loved Stone Age history and showed Mary archaeological sites in France. She was only 13 when he died. After, her mother sent her to strict Catholic schools in London. Mary rebelled and was expelled several times. At 17, she took charge of her own education. She learned to fly a glider, and began attending lectures in archaeology.

Mary and Louis met in London in 1933 when she was 20 and he 30. In 1935, she joined him in Tanzania during one of his expeditions. They married the following year.

Louis chose the Olduvai Gorge as his main area of research. It lies about 200 miles southwest of Nairobi, Kenya. Today the area is part of Tanzania. Olduvai Gorge took shape where sediment had formed over 2 million years at the bottom of a huge ancient lake.

About 20,000 years ago, an earthquake struck and the lake emptied. After, a river cut through the sediment of the old lake bed. A deep gorge formed. The river sliced through the shoreline of the lake. By doing so, the remains of people and other animals that had once gathered there were revealed. Al-



Louis Leakey in California's Calico Hills, 1966



Mary and Louis Leakey examine skull fragments

most 2 million years of history are exposed in the gorge.

Olduvai Gorge lies in the Great Rift Valley, a massive fault, or crack, in the African plate. The fault line starts from the Red Sea, which separates Africa and Asia. Then it runs southward through Ethiopia and Tanzania. It ends down in Mozambique. The crack in the plate is slowly getting deeper. Eventually it will deepen so much that part of eastern Africa will break off.

Mountains and volcanoes line the Great Rift Valley. When the volcanoes erupt they shoot off ash. As the ash lands, it buries and fossilizes bones. This makes the valley an ideal spot to find fossils. The fossils remained buried under layers of soil for millions of years. But, as the Earth shifts, the fossils are moved closer to surface where we can find them.

Life in the field

Life was an adventure for Louis and Mary in the Great Rift Valley. They lived in tents or mud huts. Kerosene lamps provided light at night. Often they had no fresh vegetables or fruit, living on fish, canned food, rice and corn meal. Sometimes Louis hunted gazelles for meat. Lions prowled their camps at night. African servants cooked their meals and washed their clothes.

The Leakeys lived outdoors in some of the most beautiful scenery in the world. Volcanic mountains surrounded them. The Serengeti Plain spread out before them. Rhinos, giraffes, lions, leopards, antelope, and zebra lived on the plains. The couple worked with a dental pick and an artist's brush. Ever so slowly, they unearthed fossils hidden long ago.

Louis and Mary found many fossils of extinct animals. But finding human fossils proved more difficult. In 1948, Mary discovered a primate skull that they thought might be the "missing link" connecting apes and humans. It turned out not to be. In 1959, Mary discovered a 1.75-million-year-old skull. The find made the Leakeys famous. In 1960, Louis found the hand and foot bones of a 12-year-old. He named it *Homo habilis*, a new species of hominine.

Until the 1950s, fossil hunting was filled with confusion. No accurate way to date the bones existed. Geologists could only make an estimate based on the age of the rocks they were found in.

Things changed with the arrival of radiometric dating. Now fossil ages could be identified much more accurately. Carbon-14 atoms would not work for dates that go as far back as early hominins; instead, potassium found in the volcanic ash was used in a new radiometric-dating technique.

Louis Leakey was convinced that humans had evolved from apes. Leakey thought knowing more about the apes would help understand hominine behavior. But, no one had studied them in the wild, only in captivity.

Leakey realized apes were losing their territory to humans. He wanted to study them before it was too late. So he set out to raise money for people to

study apes in their own habitat. In 1960, he helped Jane Goodall begin her study of chimpanzees in the wild.

Finding Lucy

Meanwhile, others had begun searching for fossil bones in Africa. The next spectacular find occurred in the Ethiopian part of the Great Rift Valley. In 1974, Donald Johanson, an archaeologist, found parts of a 3.2-million-year-old skeleton. They were the oldest hominine bones yet discovered. Johanson nicknamed the female skeleton "Lucy."

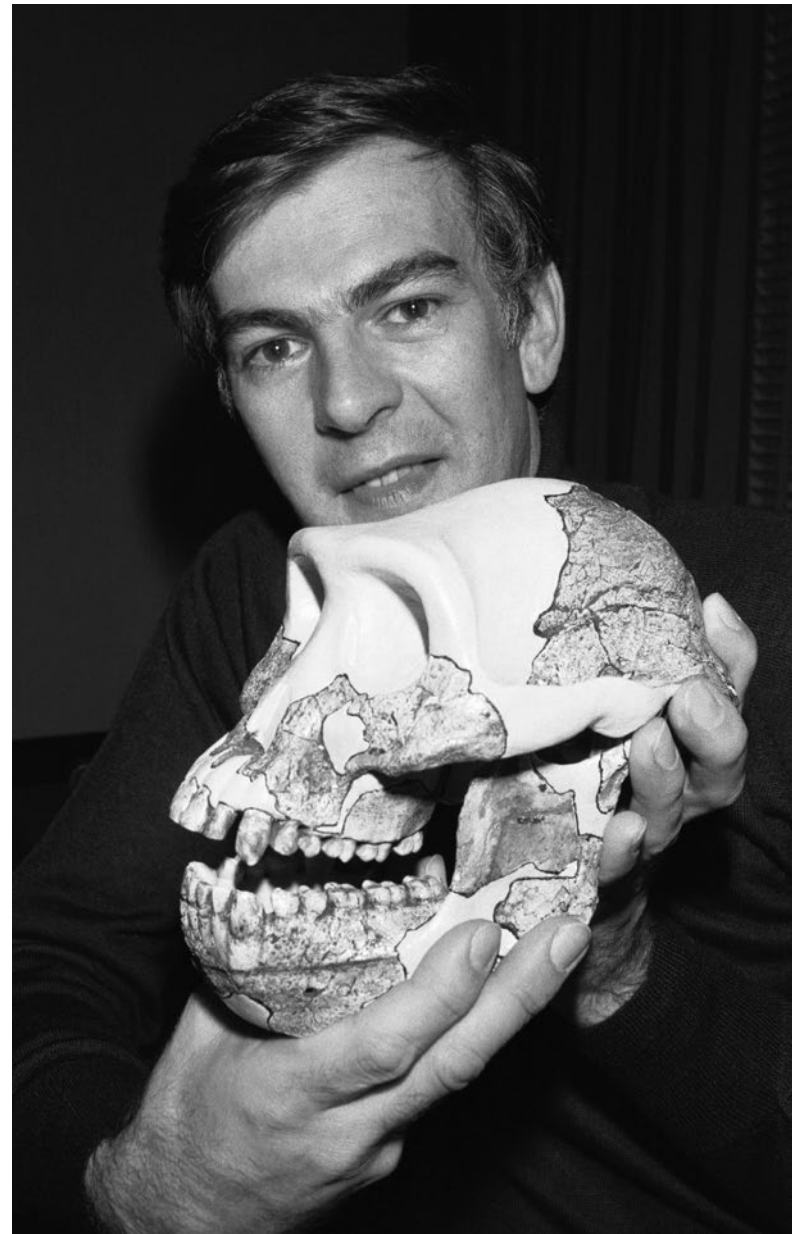
Lucy was just 3 and a half feet tall. Importantly, the foot, leg, and pelvis bones showed that Lucy walked upright. This was evidence that as humans evolved they began walking upright before their brains grew larger.

The Leakey legacy

Mary and Louis Leakey raised three sons in Africa. Their son Richard went on to run the Kenya Wildlife Service, focusing on saving elephants.

Louis died in 1972. Afterward, Mary opened a camp 35 miles from Olduvai, where the soil dated to 3.59 to 3.77 million years old. There, in 1976, she found an astonishing set of hominine footprints. They had been preserved in volcanic ash. The discovery added more evidence that hominins of that time walked upright.

Mary Leakey lived at Olduvai long enough to see leopards and rhinos become nearly extinct. She died in 1996 at age 84.



American archaeologist Donald Johanson holds up a plaster cast of the "Lucy" skull

Thanks to the work of Louis and Mary Leakey, there's overwhelming evidence that *Homo sapiens* originated in Africa. It is clear that humans separated from chimpanzees 5 to 7 million years earlier. Recent genetic testing has confirmed it. The Leakeys spent their lives searching for human origins. At a time when few others could think it, Louis demonstrated that humankind began in Africa.

Sources

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Image credits

The skeleton of Lucy

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Louis Leakey measures an ancient skull

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Louis Leakey

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Mary and Louis Leakey studying skull fragments

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Anthropologist and author Donald Johanson

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