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A day in the life of Lucy

Food and protection were high priorities for this bipedal African primate 3 million years ago

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With a natural lifespan of less than 25 years, Lucy needed to make the most of her days. It's likely she started them up a tree.

"She wanted to stay out of reach of the big saber-tooth cats roaming around that preyed on them," says Dirk Van Tuerenhout, curator of anthropology at the Houston Museum of Natural Science. "There were lots of meat eaters who would have gone after them."

"Them" being *Australopithecus afarensis*, Lucy's species of upright-walking primate. The bipedal Lucy is the star of a museum exhibit — *Lucy's Legacy: The Hidden Treasures of Ethiopia* — that opens today, inspiring Tuerenhout to take time out of his day to talk about what a day would have been like for Lucy — 3.2 million years ago.

Unfortunately, Lucy's folk did not have diaries, photos or home video to tell us about their days. Van Tuerenhout emphasizes that Lucy's daily behavior is conjecture, built on a variety of scientific evidence, from the structure of her bones to what we can observe in primates today.

"When you study human evolution you have three sources of information," he says. "You've got the fossil (bone) record, like Lucy. You also have comparative primatology, which is going out like Jane Goodall and studying for many years the behavior of gorillas or orangutans or chimpanzees. And we have DNA evidence."

From that, we can make educated guesses.

So back to that tree. Lucy's toes and fingers were more curved than ours, which helped her arboreal endeavors. Trees are poor shelter, but that may have been about all she could call home. Her "people" were not cave dwellers. If it rained, it rained. Some modern primates hold a large leaf over their head as a sort of umbrella. It doesn't keep them dry but might lessen that annoying pounding.

After checking the area for cats on the prowl and descending to the ground, Lucy wanted what we want: breakfast. Her teeth indicate she was not a meat eater, and even her plant diet had limits.

"With her teeth, she would have been capable of termites, soft-shelled fruits — say a grape or berry — but not hard-shell nuts," says Van Tuerenhout.

Lucy would not have been a mighty hunter even if she had been a carnivore. A mere slip of a girl, at only 60 to 70 pounds and 3 to 3 1/2 feet tall, she was the hunted. She spent her days keeping sharp eyes and ears on her surroundings.

Lucy's shopping wasn't as easy as traipsing down the produce aisle at Central Market or Kroger, but it wasn't necessarily grueling. Modern human gatherers in Africa and

the Amazon don't necessarily work hard to sustain themselves, Van Tuerenhout says.

"Most hunters and gatherers can collect what they need in 20 hours, and that's that. Lucy might have had a mental map and with her family knew where roots or other plant food were available. They would have gone there and harvested it. It wouldn't have been exhaustive."

Lucy's species lived long before the advent of real tools. But with a brain a third the size of today's human but bigger than most animals, she was also relatively smart. She may have used a proto-tool to add variety to her diet. Chimpanzees and orangutans today are observed sticking stems into termite nests, stirring up the occupants, then pulling out a stick covered with lunch.

"Sort of like a shish kebab," says Van Tuerenhout.

Living outdoors, Lucy could have used a warm jacket and some sturdy shoes but, alas, Land's End was way in the future.

"We know she didn't have any clothing. Not for millions of years," Van Tuerenhout says. And don't even think animal-print skirts. "She did not have a stone knife to kill an animal, or cut the skin loose, or (a tool) to puncture it and put string through it."

Sex? Our great- great- distant relatives had to reproduce to survive. (Lucy was not a direct ancestor of humans, but somewhere on a different branch of the evolutionary bush.) The unpleasant possibility is that Lucy might have been an abused partner, prone to hide from the much larger males of her own kind in mating season.

"In modern primates, where the male and female are roughly the same size, there is hardly any violence when it comes to choosing a partner," says Van Tuerenhout. "But in orangutans, where the male is roughly twice the size of the female, there is a lot of violence, between the males but also, occasionally, by the males' aggression to the females. In the nonmating season the females take off with their offspring because they don't want to be around the males."

Since gathering food was not a full-time job, and there was no house to clean or car to repair, *Australopithecus afarensis* would have leisure time. Time to socialize. It's something observed not only in humans, but in modern primates in the wild.

"They go down to the river, have a drink of water, 'You scratch my back, I'll scratch yours,'" says Van Tuerenhout. "There is a hierarchy within the group. I don't know to what extent they would have communicated, but very likely Lucy would have made sounds. Not like us, with language, but definitely she would have been able to communicate."

Lucy and her fellows had not developed a large brain capacity, one of the milestones on the road to humanity, and they weren't big and strong. But day after day, they did what it took to stay alive.

"They were smart enough to survive in large enough numbers to last a million years," says Van Tuerenhout. "We (humans) have 800,000 years to go before we can say the same."

We'll just have to take it one day at a time.

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