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Discovery casts evolution of humans in a new light

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Surprising research based on two African fossils suggests our family tree is more like a wayward bush with stubby branches, challenging common thinking on how early humans evolved.

The discovery by Meave Leakey, a member of a famous family of paleontologists, shows that two species of early human ancestors lived at the same time in Kenya. That pokes holes in the chief theory of man's early evolution — that one of those species evolved from the other.

And it further discredits that iconic illustration of human evolution that begins with a knuckle-dragging ape and ends with a briefcase-carrying man.

The old theory is that the first and oldest species in our family tree, *Homo habilis*, evolved into *Homo erectus*, which then became human, *Homo sapiens*. But Leakey's find suggests those two earlier species lived side-by-side about 1.5 million years ago in parts of Kenya for at least half a million years. She and her research colleagues report the discovery in a paper published today in the journal *Nature*.

The paper is based on fossilized bones found in 2000. The complete skull of *Homo erectus* was found within walking distance of an upper jaw of *Homo habilis*, and both dated from the same general time period. That makes it unlikely that *Homo erectus* evolved from *Homo habilis*, researchers said.

It's the equivalent of finding that your grandmother and great-grandmother were sisters rather than mother-daughter, said study co-author Fred Spoor, a professor of evolutionary anatomy at the University College in London.

The two species lived near each other but probably didn't interact, each having its own "ecological niche," Spoor said. *Homo habilis* was likely more vegetarian, while *Homo erectus* ate some meat, he said.

Like chimps and other apes, "They'd just avoid each other. They don't feel comfortable in each other's company," he said.

There remains some still-undiscovered common ancestor that probably lived 2 million to 3 million years ago, a time that has not left much fossil record, Spoor said.

Overall, what it paints for human evolution is a "chaotic kind of looking evolutionary tree rather

than this heroic march ... with the cartoons of an early ancestor evolving into some intermediate and eventually unto us," Spoor said in a phone interview from a field office of the Koobi Fora Research Project in northern Kenya.

On the Net: Nature, www.nature.com

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