What is already abundantly clear is that human evolution was far more complex than previously appreciated by anthropologists. It was not a streamlined process of australopithecus steadily evolving into modern humans, but a messy and haphazard journey that includes intervening species of many groups, some of which have never been discovered other than through the genetic traces they leave in ancient and modern genomes. "We have a long history. A lot of things happened, and a lot of ancestors contributed to our genomes today," Schlebusch says. "It's not going to be a simple story."

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**References**


### DECOLONIZING STUDIES OF HUMAN EVOLUTION

The San people of southern Africa are one of the most extensively studied indigenous groups in the world. Their click language and traditional hunter-gatherer lifestyles have long fascinated anthropologists. And the antiquity of their genetic lineage makes them a treasure trove for geneticists studying human evolutionary history.

However, studies on San lifestyles and genomes have not always been conducted ethically. For instance, scientists have sometimes referred to the San as "bushmen," a derogatory term associated with colonial-era researchers using modern indigenous groups as models of primitive human ancestors, and have taken photographs of children and breastfeeding mothers without permission. "We're not saying that everybody is bad, but you got those few individuals who don't respect the San," Leana Snyders, head of the South African San Council in Upington, South Africa, told Science in 2017. Ethical conduct in genomic research came to the foreground in 2010 following a high-profile analysis of San genomes in Nature in which the authors had, among other transgressions, not asked San leaders for permission to conduct the study.

All disciplines that study human evolution in Africa have at times been criticized for their extractive nature. Archaeological research—a field pioneered by European colonial nations—has long been driven by Western researchers digging up fossils from Africa to study them, sometimes taking them elsewhere to do so. Some hominin fossils are still displaced, such as the Kabwe skull, a famous Neanderthal specimen that is considered a representative of Homo heidelbergensis.

### EXCAVATING A CONTINENT

A number of researchers suspect that Homo sapiens arose not in a single place in Africa, but across the entire continent, emerging from a network of interconnected hominin populations. But for decades, archaeologists positioned East and South Africa as important places for hominin evolution and the putative birthplace of our species. That’s likely because most fossils, including early modern humans, are found in those regions.

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