

I'VE GOT YOU UNDER MY SKIN

MODERN HUMAN ORIGINS

On Christmas Day 1998, in the Lapedo Valley, 90 miles north of Lisbon, Portugal, the steam shovel stood silent and still on the flat dirt terrace carved out of the cliff above the tree line. Its toothed bucket yawned at the base of the slope. The hillside was quiet now. Everyone had gone home to celebrate Christmas—everyone except the anthropology student, Cidália Duarte. She rolled onto her back, rubbing her elbow. Her left arm must have fallen asleep. She was trying to get the blood flowing again. Her arm tingled, and the smell of acetone, the chemical solvent she was using, made her dizzy. What was she doing here today? It was Christmas.

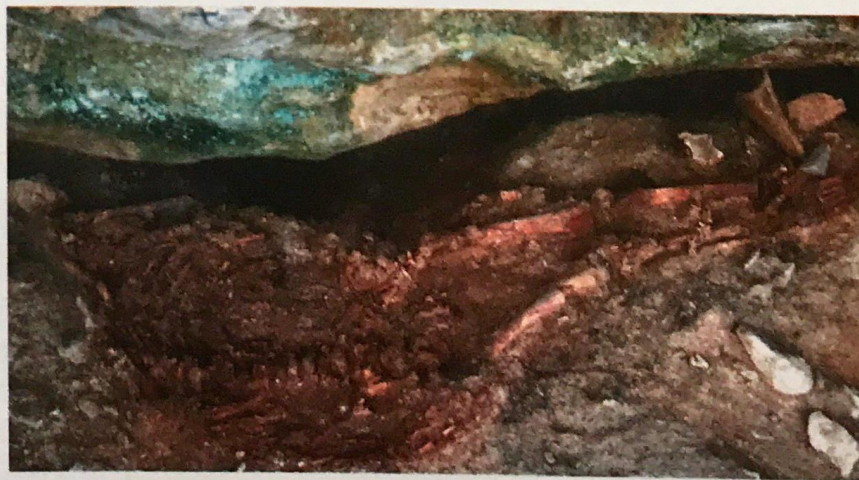
Duarte turned her head toward the four-year-old—the four-year-old who had been dead for 25,000 years. He lay on his back, too. She couldn't—*wouldn't*—leave the skeleton Duarte's team had nicknamed "the Kid" out in the open. Anything could happen. Tonight the evening news would air the videotape that documented the excavation. Portuguese public television called the segment "A Child Is Born." Soon it wouldn't be enough to pull the old tractor hood over the Kid to hide him overnight. Soon they would need someone to protect him around the clock. The curious would come. They always do. She couldn't blame them. The Kid was *really* something.

He'd been buried turned toward the cliff with his right hand on his hip. His arms and legs were strong—built like

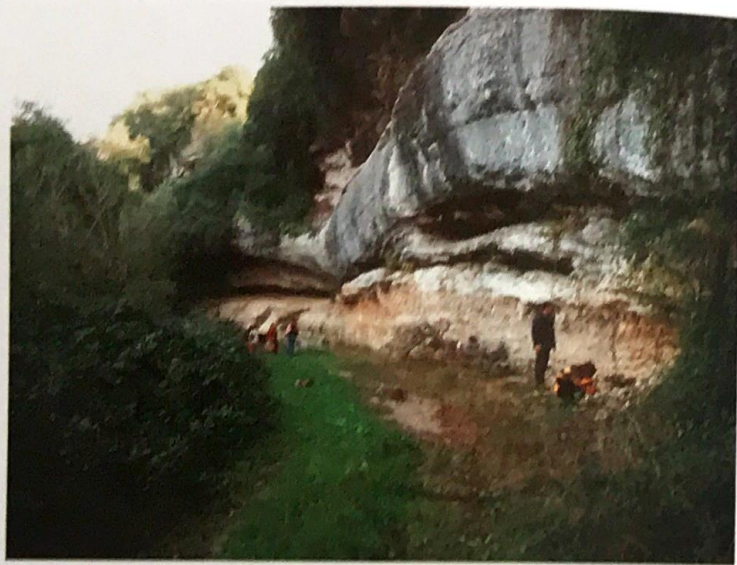
“ HUMAN SKELETON AND PENDANT IN PORTUGAL



“ *Homo sapiens sapiens* skeleton, Lapedo Valley, Portugal, 25,000 years ago



The skeleton of the Kid as it was being excavated at Lagar Velho in the Lapedo Valley, Portugal.

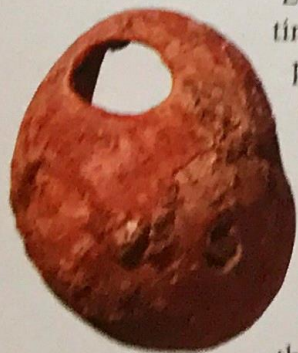


The Lagar Velho rock shelter in Portugal is where the Kid was discovered. Hominids and humans often camped in rock shelters because the overhanging cliff protected them from rain and wind.

a little boy's arms and legs. Duarte rolled back on her side and squirted acetone on the bone. It evaporated quickly, loosening the dirt but not damaging the bone. She picked up her paintbrush and swept the grit from his shoulder blade, and with a plastic spoon she gently scooped away the soil. It was a tedious process—a tedious task for Christmas Day.

Earlier she had found a pendant painted red, a tiny seashell someone 25,000 years ago had pierced a hole through to make a necklace for the Kid. She smiled, thinking of the human who made this necklace so long ago.

But something bothered Duarte. She knew it bothered the other scientists working here, too. There was something unusual about the Kid's combination of features. She thought of the Kid's snowplow-shaped Neandertal jaw and the pointed modern chin. Moderns found in Europe are called Cro-Magnons. They are named after the site where they were found in France. Cro-Magnon



66 Pendant, Lapedo Valley, Portugal, 25,000 years ago

people were the first *Homo sapiens sapiens*, arriving in Europe around 35,000 years ago. Could this be a child from both Cro-Magnon and Neandertal parents? The team took pictures and e-mailed them to an authority on early modern anatomy whose specialty was Neandertals.

Like almost anything archaeologists dig up, the Kid caused a stir in the scientific community. Scientists who supported a theory that modern humans—humans like us—had come out of Africa and *replaced* populations along the way did not want to hear about a hybrid child. Their story—known as Out of Africa—had fully modern humans leaving Africa and spreading across Europe and Asia. The new arrivals drove existing populations to extinction. There was no mixing of populations in their theory. It was out with the old, in with the new.

There have been many theories as to how the Neandertals ended their time on Earth. Some suggested that Cro-Magnons massacred the Neandertals, or pushed them out of their hunting grounds and into nooks where they could do little more than scratch out a pitiful existence. Others said that the Cro-Magnons were carriers of deadly viruses to which the Neandertals had no immunity. But the Cro-Magnon takeover didn't have to be so dramatic. As the science writer James Shreeve explains in *The Neandertal Enigma* about the Cro-Magnons, "They had only to produce a few more babies every year than the beetle-browed others they occasionally met and after a couple of thousand years, the job was done." Many anthropologists agree, suggesting that instead of a climactic last scene, Neandertals simply faded out.

And then there were those who don't buy into this Out of Africa business. These scientists believed that populations all over the Old World evolved into modern humans gradually about the same time. To these scientists, Neandertals are not just some dead-end population replaced by a new and improved version. For them the Kid represents a step along the path from old to new.

There was no question that by 35,000 years ago, moderns were springing up all over the Old World. The question was—*how?* Did the moderns evolve from existing populations?

NEW MEANING TO THE TERM "GYM RAT"

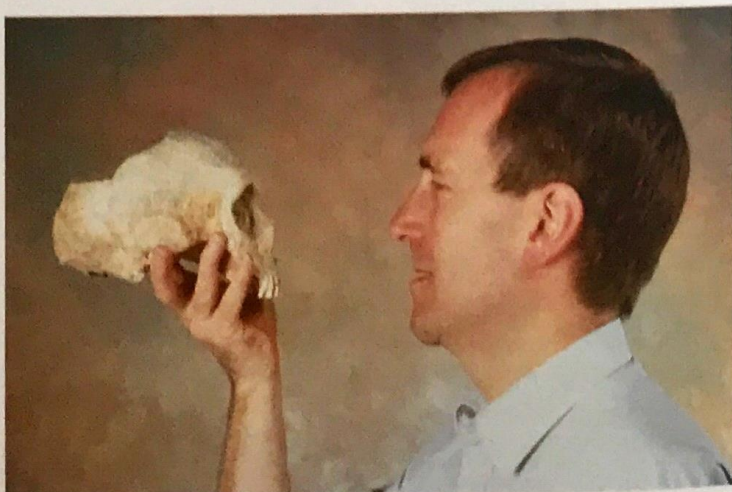
Some scientists go to extremes in the name of science. One extreme scientist wanted to prove that Neandertals' bones were thicker than those of modern humans not because of their genes, but because their lifestyle was so much more active. For hours every day he made armadillos jog on treadmills to prove his point. He chose armadillos because they have litters of four genetically identical young. Two he would let go about their normal digging ways, and two would hit the gym. The running armadillos always had thicker bones—the more exercise, the thicker the bones.

Or were moderns moving in? One winter in 1970 a young man named Chris Stringer decided to find out. He had no money and no reputation (yet), but he had a passion. The passion began when he was nine years old and he heard a BBC radio show about Neandertals called “How Things Began.” At 10 he was sketching skulls. At 11 he was following a teacher to digs. His parents thought that this was a bit odd, but they figured that he’d grow out of it and come to his senses.

“By sixteen, I was on track for medical school,” Stringer told author James Shreeve, who interviewed him for the book *The Neandertal Enigma*. “And then somebody handed me a college catalog, and I saw a course listed under ‘Anthropology.’ Until that moment, I had no idea that you could actually do this for a living.”

In graduate school he began his quest for the answer to modern human origins. He thought that if he could just measure enough skulls, he would find out if Neandertals evolved into modern humans or if they were two separate twigs on the evolutionary bush. Chris Stringer writes in his book *African Exodus*,

I would use precise instruments such as calipers and protractors to determine skull height, breadth, and width; angle of forehead; projection of browridge;



Nose to nose: paleoanthropologist Chris Stringer examines a hominid skull (or is it the other way around?).

and dozens of other features to place Neandertals and Cro-Magnons in their evolutionary context. . . . All that concerned me. . . was getting my hands on fossil skulls—many of which could be found in European museums where they had been gathering dust since the turn of the century.

Chris Stringer traveled across Europe sleeping in his car, camping, or staying in youth hostels. He measured Neandertal skulls wherever museums and universities would let him. In Rome thieves broke into his car. They took his clothes and a fresh human skull he’d brought along to compare to the Neandertal skulls he was measuring. He writes, “My precious measuring instruments and hard won data were not stolen. If I had lost these, I would—as I recorded in my diary—have simply thrown myself in the [River] Tiber. From then on, I always slept with my data sheets under my pillow.”

At the end of his journey, he had run out of money and clean clothes. He’d lost 14 pounds and his car was held together with coat hangers. But he had measured his way to an answer that satisfied him, if not other scientists. He writes, “I became convinced the Neandertals were not our ancestors, . . . and that there was little sign of intermixture between Neandertals and early modern people.”

Chris Stringer has come a long way from the days of sleeping in his car. Students approach him now and ask his permission to examine hominids at the Natural History Museum in London. So what does Chris Stringer make of the Kid—the intermixture of which he claimed there was little sign? He doesn’t want to jump to conclusions. He entertains all explanations, including climate, for the Kid’s sturdy bones. It is entirely possible that the Kid is completely modern, with no Neandertal in him at all. After all, look at us. We look very different from one another. Stringer writes, “Human differences are mostly superficial. What unites us is far more significant than what divides us. Our variable forms mask an essential truth—that under our skins, we are all Africans.”

RACE?

Race is a scientific term that came about when scientists observed that a plant growing in the north may express itself differently from the same plant growing in the hot, humid south. Race is an attempt to group these differences. There are problems with racial groupings, particularly when it comes to humans. One obvious feature that varies from human to human depending on geography is skin color.

Near the equator, where the sun is strong, humans have dark skin. Dark skin protects the body from too much ultraviolet light. Skin color changes very gradually as you travel away from the equator and the sun’s rays lose their intensity. People in places like North Africa and southern Europe have brownish skin; they are neither black nor white. Many scientists believe race is meaningless when applied to humans.