

WOULD YOU SLEEP WITH THIS WOMAN?

# NEANDERTHAL

# LOVE

AFTER MODERN HUMANS MIGRATED OUT OF AFRICA, THEY MAY HAVE ENCOUNTERED THESE BARREL-CHESTED HOMININS, NOW EXTINCT. DID WE HAVE SEX WITH OUR BIG-BROWED COUSINS?

AND IF SO, ARE THEY PART OF US STILL?

**I****N** the summer of 1856, in the Neander Valley near Düsseldorf, miners quarrying limestone discovered the top of a misshapen human skull and other bones. A debate began over their origin. Some argued the remains belonged to a deformed Cossack horseman who had crawled into the cave to die; others felt it had to be an ancestor of the Australian aborigines, who in Victorian times were thought to be the least advanced of *Homo sapiens*.

Further whisker stroking revealed the astonishing truth: This not-quite human was the “missing link” between ape and man. Why else would his bones indicate he walked stooped over on bent knees?

As it turned out, the man stooped because he had arthritis. In 1864 a geologist from Galway suggested the bones belonged to a distinct, brutish species he dubbed *Homo neanderthalensis*, or Neanderthal Man (*thal* was German for “valley”). But it wasn’t until 1886, when two complete skeletons were unearthed in Belgium, that most scientists in the young field of paleoanthropology accepted *neanderthalensis* as a distant cousin of *Homo sapiens*. The two

BY CHIP ROWE





## DID WE SEE THESE HUMANS AS OUR SOCIAL AND INTELLECTUAL EQUALS OR TREAT THEM LIKE ANIMALS?

RECONSTRUCTED FROM FOSSIL AND GENETIC EVIDENCE, THIS NEANDERTHAL REDHEAD LIVED ABOUT 43,000 YEARS AGO.

populations split between 500,000 and 800,000 years ago, probably from a common ancestor called *Homo heidelbergensis*, after which the proto-Neanderthals hiked west to the Middle East and Europe. Back in Africa, the *Homo sapiens* population may have withered to as few as 2,000 people on the entire continent—a dodo’s breath from extinction. Yet 40,000 years ago, after these disparate Africans managed to find each other, a population explosion pushed *sapiens* north.

Ten thousand years later, the Neanderthals were gone. They made their last stand in modern-day Spain and Portugal, south of the Ebro River, and stragglers may have survived another 2,000 years in a cave on the Rock of Gibraltar. Although other hominins (i.e., species more closely related to us than chimpanzees) possibly outlasted the Neanderthals—*Homo floresiensis*, Hobbit-like humans who lived in isolation on an island in Indonesia; *Homo erectus* in the Far East; a cousin in Siberia whose fossilized pinkie bone was discovered in 2008; and others surely yet to be unearthed—*Homo sapiens* is today the last mankind standing of at least eight varieties of humans.

The Neanderthals survived for at least 150 millennia. What doomed them? Was it a suddenly harsh climate? Did they not breed quickly enough? Did their tools suck? Did they meet their match in modern humans, who, while not as stout, had a darker disposition and more efficient ways to kill? Or did we fuck them into oblivion? That is, we may have fucked the Neanderthals by driving them to the sea with our superior guile. But did we actually *fuck* them?

Anthropologists call it interbreeding. They don’t calculate how many beers it would take. Last summer, after comparing DNA extracted from thimblefuls of powdered Neanderthal bone fragments to that of five modern humans, a team led by Svante Pääbo of the Max Planck Institute for Evolutionary Anthropology in Leipzig calculated that Neanderthals have contributed 2.5 percent of the DNA of every living person except natives of Africa (where Neanderthals never lived). Although there is no fossil evidence, the paleogeneticist

believes the two groups first encountered each other in what is now Israel between 60,000 and 100,000 years ago, after early *Homo sapiens* (our *Homo* genus plus *sapiens*, which is Latin for “knowing man”) arrived from Africa but before we spread into Europe and Asia. The sequencing has also revealed what makes us unique; scientists so far have compiled a list of more than 200 genetic variations that appear to have given us the edge over *neanderthalensis*, including one that improves sperm motility and many devoted to brain function. But given that *sapiens* and *neanderthalensis* can reproduce, we are not distinct species. Instead, technically, we are subspecies—*Homo sapiens neanderthalensis* and *Homo sapiens sapiens*.

Despite the attention given to the shared genetics, DNA doesn’t say much about how or if we interacted. Is that 2.5 percent the long tail of a single one-night stand? Although Pääbo finds this scenario unlikely, even one half-breed in a limited population could have spread *neanderthalensis* markers far and wide. Did we view Neanderthals as less than human and avoid them except for occasional desperate acts of “bestiality”? (Male members of our sophisticated species are to this day caught penetrating creatures not nearly as closely related.) Or did we consider Neanderthals as equals and rut so wildly they essentially melted into the crowd?

New research suggests early hominins were willing to have sex with anything on two feet. In October British scientists reported that Neanderthals and Cro-Magnons (the *sapiens* best known for their cave art) had physical characteristics that signal aggressiveness and promiscuity. Specifically, higher levels in the womb of androgens such as testosterone (which fuels the sex drive in men and women) are thought to increase the length of the fourth finger in relation to the second finger. By that standard, fossilized finger bones indicate Cro-Magnons and Neanderthals were even hornier than we are. In April an analysis of 99 populations around the globe by genetic anthropologists at the University of New Mexico found hints that we interbred with other species some 60,000 years ago in the eastern Mediterranean and (concluded on page 115)

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45,000 years ago in east Asia, which could explain regional variations in our genome. In December Pääbo announced that, based on DNA tests, the pinkie bone from Siberia belonged to an individual from a species dubbed the Denisovans, after the cave where the bone was found. This branch descends from hominins who left Africa about 400,000 years ago—those who went west evolved into Neanderthals and those who went east into Denisovans. But the most startling discovery was that the DNA of present-day New Guineans is 4.8 percent Denisovan, indicating that whatever direction the winds took us, we always managed to seduce the locals.

We don't have any idea what Denisovans looked like. But scientists have found enough Neanderthal skulls for anatomical sculptors to summon faces from the prehistoric past. Would you have slept with a Neanderthal woman? Before you answer, let's get to know her better. The first thing that strikes you (perhaps literally, if you're leaning in for a kiss) is her supraorbital torus, the thick, double-arched brow that protects the eyes from downward blows and/or absorbs tension during chewing, like our forehead. She finds your chin alluring, since she doesn't have one. We may have reminded Neanderthals of their own children, with our prominent foreheads and small, flat faces, both of which are signs of immaturity among mammals that elicit feelings of tenderness. "If this is so, the Cro-Magnons must have looked very cute to the Neanderthal," writes paleoanthropologist Juan Luis Arsuaga. *She thinks you're cute!*

While making out near the fire pit, you notice her incisors are worn. That's because Neanderthals from a young age probably used their front teeth as a "third hand," such as when scraping a hide. Inside her skull she has an enormous nasal cavity, which may act like a radiator to humidify and warm the frigid northern air. She stands about five feet tall and her body is compact, with broad hips, short forearms and short lower legs. Her skin is lighter than yours—pale skin absorbs more sunlight, which helps synthesize vitamin D during the long winters. She may be a brunette, a blonde or a redhead—the same hair colors you find in Caucasians today. She may also be cannibalistic, but no one's perfect.

Can she speak? She can grunt, but can she process your words or just your tone, like a dog? "Neanderthals were probably as intuitively smart as it's possible to get, but they didn't leave a record that screams symbolic reasoning," says Ian Tattersall, a paleoanthropologist at the American Museum of Natural History in New York. "We may have met in body, but we never met in mind." Even if they could comprehend language, Neanderthals probably couldn't speak. While the upper and lower part of the vocal tract are the same size in *Homo sapiens*, the Neanderthals' jutting faces made their upper tracts longer and their necks too short to accommodate vocal cords. The

architect of this hypothesis, anthropologist Philip Lieberman, has on his website a jarring audio file that is either the mating call of a castrated frog or what a Neanderthal might have sounded like trying to form the vowels in the word *see*.

None of this is to say your date is stupid. The Geico caveman could not have dominated an area that stretches from the Atlantic to Uzbekistan and perhaps into China for 150,000 years in fluctuating and unforgiving climates. By contrast, the African tundra where we evolved was perpetually sunny and the environment and animals and plants unchanged for millions of years. Based on our use of symbols and our artwork and weapons, *Homo sapiens* was clearly the smartest human yet. The historian Marcel Otte observes that one of prehistoric man's great achievements was to turn animals' own tusks and horns against them. Would your hunter girlfriend be impressed? The Neanderthals also used tools and carried portable art, but did they just collect these items from our trash? That is a common conclusion, but João Zilhão, a paleoanthropologist at the University of Bristol, notes that at least two dozen sites in France and Spain contain artifacts and art that predate the arrival of Cro-Magnons. Painted shells found in recent years in Spain appear to have been parts of a necklace, an "identity card," he says, and Neanderthal females may have worn makeup. A few researchers ask why the Cro-Magnons appear to have flourished only after they came in contact with Neanderthals.

Some scientists believe the only way we will discover whether Neanderthals and *sapiens* formed human relationships is in the bones—or, as the joke goes, in a grave where a modern human and a Neanderthal are buried side-by-side holding hands. In 1998, at Lagar Velho, a site in central Portugal, a team led by Zilhão found what some paleoanthropologists believe is the next best thing—the fragmented bones of a four-year-old child who died some 24,500 years ago. In these remains they see the short, thick limb bones of a Neanderthal and the teeth, jaw and chin of a modern human. Since the child lived long after *neanderthalensis* had vanished, the scientists argue hybridization must have been widespread before the extinction—a mixing of cultures. Ian Tattersall diplomatically calls that conclusion "a brave and imaginative interpretation." But this reading of the evidence sits well with paleoanthropologist Erik Trinkaus of Washington University in St. Louis, who takes the position that Neanderthals and *sapiens* shared so many behaviors they would have thought nothing of mixed couples. As evidence, he points to 30,000-year-old fossils from Romania, France and the Czech Republic that, like the Lagar Velho child, appear to have features from both species. It was not an abrupt, violent end for the Neanderthals, he insists, but "extinction through absorption." If you're going to become extinct, it's the best way to go.

