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All in the Family

“UNLOCK THE FAMILY STORY IN YOUR DNA,” proclaims an ancestry website. Sounds harmless enough, so why does that fill me with dread?

Sure, I could discover there’s royalty in my Lithuanian DNA—perhaps a duke or a duchess—or a brave knight who fell at the Battle of ... wherever. More likely, however, I’ll find some distant cousin who died face down on the bar floor after winning a Krupnikas-drinking contest. Perhaps a serial goat rapist or ax murderer, or some nutcase beheaded for questioning the birth certificate of King Mindaugas, the first (and only) crowned king of Lithuania.

Besides, thanks to modern science, I already know plenty about my DNA. Oh, the stories it could tell.

For one thing, I share almost 99 percent of my DNA with chimps and bonobos, and over 98 percent with gorillas. Though most of these relatives still live in Africa, I did meet one of them a few years back at the Bronx Zoo in New York. I was strolling through their Congo Gorilla Forest exhibit, when all of a sudden there he was—a full grown, male western lowland gorilla.

He was leaning against a tree stump, gazing off into space with a forlorn expression. Stepping closer to the glass separating us—which protects them from our human respiratory diseases—I paused to look into his face. He looked back at me in a way I will never forget. For one profound moment, there was some sort of connection between us. In that great face, I saw not a gorilla, but a personable presence, someone I could relate to. I have no idea what went on in his mind. Perhaps it was: “Why aren’t you in here instead of me?”

I’ve never been able to look at a gorilla in captivity since. Don’t think I could handle seeing one of my relatives locked up that way, despite all the arguments for conservation and education made by zoos. Supposedly, we humans are more advanced, with our superior big brains and all. The way things are going lately, though, sometimes I feel it is our species that should be locked up.

Met another African relative—though not in the flesh—back in 2007. She, or what was left of her, was on display at the Houston Museum of Natural Science. Lucy her name was. That’s what the scientists who found her fossilized bones named them, after the then popular Beatle song Lucy in the Sky with Diamonds. She lived over 3 million years ago, in what is now called Ethiopia. Though belonging to a different genus—*Australopithecus*—she was a fellow hominid. Next to her precious bones, the museum showed a life size model of what she might have looked like. She was much shorter than me—only three-and-a-half feet tall—with a pelvis that was all female. Her face was only a reconstructed one, but again I had that strange feeling of connectedness across the eons, that she and I were still part of the same family tree. Perhaps it was just my imagination, but she reminded me a little of my great Aunt Lavinia. Her eyes seemed to say: We are all African. For that is indeed where our human line branched off from other animals. Together with gorillas, bonobos, and chimpanzees,

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we share much of the same DNA, along with the same common ancestor.

Turns out I have oodles of relatives, all over the planet. Many of them are fellow primates. Though not as close as African apes, my orangutan relations over in Borneo and Sumatra share almost 97 percent of my DNA. Not far behind are monkeys, at 93 percent. Whether I'm looking into an orangutan's face or a monkey's, it's hard not to see the resemblance, though some of them might take this as an insult.

There's even a fish, known as the zebra fish or zebra danio, with whom I share 85 percent of my DNA. A popular aquarium fish as well as research subject, this little freshwater minnow's ancestors originated on the Indian Subcontinent. Dogs, by comparison, share only 84%, which just goes to show that you can't always tell who your relatives are just by looking at them.

And next time you read about some new medical discovery involving some poor laboratory mice sacrificed for the good of humankind, ponder this: they share 90 percent of our DNA, which of course is why we use them in the first place, and why E.B. White's classic children's book *Stuart Little* still tugs at our heart strings.

Admittedly, some of my relatives are farther removed. For example, I share only about 60 percent of my DNA with a banana, and try as I might, I just can't see any resemblance there. With roundworms, it's only 21 percent, though I suspect some families share a much larger percentage.

Within our own species, there's only a tiny difference in DNA among all humans on earth—about 0.1 percent. Regardless of race or national origin, we are far more alike than not.

Of course, even though we may share significant percentages of our genetic material, key differences remain in how our genes are sequenced, which does explain why most members of my family gallery don't look like mice or fish (except for Uncle Vinnie). We don't even know what many of our genes do. Within the human genome, we still possess many genes inherited from our evolutionary past that are not used because they no longer serve any useful purpose. So it's important not to read too much into the fact that we share some of our genes with a banana.

But the mere fact that these mutually inherited genes are there reveals a more important truth. We are all related—humans, apes, mice, fish, bananas, roundworms, bacteria—all life on earth. It's right there in the fingerprints of our DNA.

According to a study published in the journal *Nature*, evolutionary geneticists have traced this material back 3.8 billion years to what is called LUCA (last universal common ancestor). This remote ancestor may have resembled the strange organisms that still exist on earth within hot volcanic vents found deep under the oceans. Talk about long distant relatives. But from that ancient trunk would eventually spread the branches of our tree of life. It's all in the family.