

# DNA SUTRA

*The genetic karma of our inherited selves*

BY RICHARD ESKOW | ARTWORK BY MIA BROWNELL

**I**t began with a rush of blood. Then came fear, and curiosity. Were there dangers hidden in my genes? Clues about my future, even my death? Was my "self" my personality, programmed into my genome?

Penetrate completely the matter of birth and death, says the traditional Zen instruction. Somehow I imagined it might be easier to let go of "body and mind," as Zen master Dogen instructed, if I knew that both of those phenomena had been constructed genetically.

Most of our ancestors are forgotten, faceless and nameless. But they left their genes, and some left their words. I searched through those words and genes, expecting to see in them the familiar face of a hero or victim from the old stories.

I glimpsed that face. But I saw something else, too. I saw the face of a persecutor, a killer. I saw a stranger's face. My face. And behind it, an entire world. My world.

Today, then, is the day  
the melting snowman  
becomes a real man.

The twelve words of this Zen death poem are the only record of Fuxen, the monk who wrote them as he lay dying in his 57th year. In my own 57th year I looked down into the toilet I had just used and saw bright clouds of blood forming lacy canals that shapen in the water. A round of cancer tests followed, adminis-

tered by a doctor who insisted that "things like this don't just happen."

Anyone who's being tested for a life-threatening disease lives in suspended animation. Our lives become drifting swirls of probability whose futures emerge like faces, sometimes kind and sometimes fierce, only to recede with the next lab report. We're like Schrödinger's cat from the physicist's thought experiment, locked in a lead box and neither alive nor dead—or rather, both alive and dead—until someone looks inside. Meanwhile indifferent strangers probe our bodies, or slip us into imaging machines where we scratch at the metal walls like cats.

In the end my tests showed nothing. No disease, no danger, no signposts to early death. Sometimes, apparently, things do just happen.

To study the self is to know the self, said Dogen. Our genome is like an ancient sutra. Like a sutra, the genome carries a series of brief coded instructions from the past. Genes guide our growth and bear programmed instructions. To learn more about mine, I laboriously filled a vial with spit and mailed it to a company called 23andMe. Then I waited.

To know the self is to forget the self, Dogen continued. Genes influence our health, our appearance, even some of our preferences and tastes. More controversial reports suggest they also influence our talents, sexual orientation, propensity for violence, even whether or not we're safe drivers. Is there a "self" at all, or just an aggregation of genetic tendencies?

PHOTO: GETTY IMAGES; ARTWORK: MIA BROWNELL; ILLUSTRATION: MIA BROWNELL



To forget the self is to be enlightened by all things. Buddhist teaching suggests that the Self is an illusion, and identity is an ongoing confluence of forces. That means that, very literally, our sense of self is shaped by the world around us. Genes that were shaped by environment and history then shape our bodies. The "self" is more like a raincloud than a stone. It's created and shaped by intersecting currents of DNA and time, the way rain clouds are created and shaped by currents of air and water.

People often describe the genome as a blueprint, but it's more like a weather report. It can't tell us what tomorrow's clouds will look like, but it can warn us there's a chance of rain.

"Man is the language of God," a Hasidic rabbi once said. My father's parents escaped the Ukrainian pogroms and rarely spoke about the past. But the rabbi at my grandfather's funeral read signs in the inscriptions on his tombstone and the location of his grave, a place of Hasidic honor within sight of the Grand Rebbe's tomb in a Jewish cemetery.

We learned that my nonbelieving grandfather was the son of a Hasidic rabbinical judge, a *dapan*. Isaac Bashevis Singer and Elie Wiesel wrote about the mystic Hasidic rabbis, who sometimes resemble Buddhist masters. One abandoned his identity so completely that he had no name but "The Jew." Another rabbi felt sorry for a coachman standing in the snow outside a reception in his honor, so he held the man's horses for hours and shivered as guests as came and went.

Some rabbis even spoke of reincarnation. "Long ago in Egypt," said one, "every one of us was at the prophets' feet to receive their teachings." Heredity as rebirth, as karma? "The past," said the rabbi, "is heavy with meaning."

Wiesel wrote that once in the 15th-century the rabbinical courts of Eastern Europe—my great-grandfather's courts—were suddenly "endowed with a messianic dimension" and swept by dark prophecies. Judges spoke of the biblical armies of Gog and Magog, wrote Wiesel, and "their gigantic, apocalyptic war." Their apocalypse arrived a few decades later, delivered by the Third Reich.

My mother's Catholic mother was French and Swiss, raised in Parisian wealth only to see her family lose everything in the First World War. My mother's father was born in a covered wagon heading West, descended from the "bad" side of an distinguished English family whose family tree included diplomats and convicts, pirates and bishops.

This grab bag of ancestors was unified by two things: an inclination to religious leadership and a deep aversion toward Germans. My Jewish relatives wouldn't speak of them, and my Catholic grandfather would spit out the words "les sales Boches"—which, roughly translated, means "dirty Krauts."

Who, exactly, was the object of their hatred? Imagine there's no country, the song says. But we don't have to imagine. Science confirms that countries are a fiction. There is no "national" DNA. Bloodlines cross borders as freely as migrating birds. Germany's gene patterns, like all nations', overlap with those of its neighbors. In fact, Germany's central location left it with a more mixed bloodline than those of more isolated countries like Iceland, whose residents are genetically more "Irish" than Germany's are "German."

A nation's genetic patterns are like chords on a piano. Science traces our nationality by telling us which country's "harmonies" our genome most closely resembles. Europe's "notes"—its bloodlines—all come from somewhere else. They're linked to people everywhere, including the "races" some Europeans want to exclude.

And the differences are minuscule. Everyone's genes are 99.9 percent identical. They're also 97.5 percent like a chimpanzee's and 70 to 85 percent like a mouse's (though different genes are turned "on" or "off" in different

species). All living things share DNA from a common ancestor, a single, large, soup-like organism that divided into separate beings 2.9 billion years ago. Humans, plants, and animals were originally, to appropriate Rashi Bernie Glassman's Zen phrase, "One Body."

Our maternal bloodline, passed from mother to daughter, shows that we're all descended from the same woman. Our paternal line, traced from father to son, leads to one man. "Imagine"? It's the jingoists who "imagine." Nations are an illusion. Ancient hatreds have no place in the genome. Genes don't divide us. They unite us.

Good thing, too. Joanna Mountain, Senior Research Director at 23andMe, reviewed my report and explained that I'm more than half German. "You share more than half your DNA with people who had Germans as all four grandparents," she said. There's German "blood" on both sides. My mother's ancestry is more German than British, French, or Swiss, probably because Angles and Saxons conquered England and originated in Europe.

My German-averse ancestors might have been shocked. Nietzsche, my fellow "German," said, "He who fights monsters must take care not to become a monster too."

Humanity's common "mother," called "Eve" or "MoM" (for "Mother of all Mothers"), probably lived around 200,000 years ago. She was dark-skinned and short—four feet tall or so. In her lifetime there may have been no more than two thousand human beings on the entire planet. Everybody comes from one of seven bloodlines, or "haplogroups," each traceable to one of Eve's female descendants.

My mother's bloodline is the 40,000-year-old "H" group. It's the most common European line, though all are found on most continents. The H line comprises half the population in parts of the Near East. It connects me to Luke the Evangelist (religion again!), who might have written the Bible's book of Luke.

Eventually my ancestors branched off from the main line, separating me from H celebrities like Jimmy Buffet. So while my mother's family can be found in Poland, Hungary, and Eastern Europe, I'm only distantly related to the residents of Margaritaville, and our final branching, "H7a," is described in the scientific literature as "very rare."

Go your way; behold, I send you out as lambs in the midst of wolves.

—Luke 10:3

Our common "Father of Fathers" lived between 80,000 and 142,000 years ago. My father's "J" line began with the common "father" of Jews and Arabs, who lived in the Near East 40,000 years ago. His genes were carried around the world by the Jewish Diaspora and the spread of Greek and Muslim empires. They can be found in most Lebanese, and in many Greeks and Italians. The ancient seafaring Phoenicians were Js, their offspring introduced agriculture to Europe.

A smaller, "J2" branch of my ancestry includes many of the world's

(continued on page 105)



By William Sauser