## our Investing Personality in Your DNA? Maybe your DNA made you do it.

Whatever investing mistake you have committed lately, there is probably a gene that is often associated with that behavior. Are you predestined to be the prisoner of your genetic code?

To find out, I recently spent a day at the University of Pittsburgh getting a battery of DNA analyses and brain scans. I consider myself a patient and disciplined investor, so I volunteered as a guinea pig in Ahmad Hariri's imaging genetics lab to learn how my genes and brain activity shape my behavior. The results shocked me.



By Jason Zweig

After I spit into a cup, Dr. Hariri had my DNA analyzed to find out which form I have of five genes that influence the brain circuits that generate decisions about risk and reward over time. His findings: In all five genes, I have a variant, or allele,

that is sometimes associated with bad investing decisions.

Consider the FAAH gene. Roughly 25% of people with European ancestry carry the 385A allele of this gene. That tends to damp their brains' fear circuitry and to intensify their brains' reaction to the prospect of making money. I am one of those people.

Or take the DRD2 gene. Some 20% of

them respond more intensely to gambles, even when no skill is involved. I have it.

When I had my brain scanned with a functional magnetic resonance imaging, or fMRI, machine, that wasn't a pretty picture either.

While I lay inside the fMRI tube, I viewed a card face down and tried to guess whether it was higher or lower than a five. If I got enough of the guesses right, I was supposed to win \$10. Whenever my guess turned out to be right, my ventral striatum—one of the brain's reward centers—responded roughly twice as intensely as that of the average person in Dr. Hariri's experiments.

That suggests I may get an even more visceral rush out of making money than other investors do. Dr. Hariri has found that people whose brains respond like mine tend to crave the immediate gratification of a quick profit. "Controlling this kind of impulsive response to reward," says Dr. Hariri, "is crucial to success in many aspects of life"—like investing, where impatience often lowers returns.

Another test showed that my brain is about 50% more sensitive to fear than that of the typical person Dr. Hariri's lab has tested.

Taken together, my genetic markers and my brain activity seemed like a recipe for investing disaster.

Happily, the lab also ran a test to see

how I react to real-world financial decisions. That produced a different picture.

Given the choice, would I rather have a small profit sooner or a larger - profit later? Many people hate to wait, choosing as little as \$50 today rather than wait a year to get \$100. I, meanwhile, was willing to wait a year for \$100 rather than take anything less than \$90 today. When he saw my results, Dr. Hariri joked that I exhibited "Zen-like patience."

The contrast between the raw material of my genes and the final output of my behavior isn't unusual. Perhaps 20% of the variation in risk-taking among individuals is genetically determined; the rest comes from our upbringing, experience, education and training. So, while

my genes bias my brain toward spooking easily and trying to make a quick buck, that isn't how I actually behave. I hold investments for years, even decades; I don't panic in bear markets, and bull markets make me uncomfortable.

Those habits, I now understand for the first time, don't come naturally to me. I have been fighting my genes for years, and the reflective parts of my brain have been struggling to rein in my emotions for a lifetime.

Growing up on a farm, with warm parents who knew a great deal about history, may have trained me to evaluate momentary changes in a longer-term context and to think twice before acting on gut feelings. From studying the writings and careers of Benjamin Graham and Warren Buffett, I learned to distrust the crowd and to remember that future returns depend on today's prices.

There is always a tug of war inside each of us between nature and nurture. But during scary times like these, says Dr. Hariri, "environmental stresses can play a critical role in unmasking any underlying biases determined by your genes." In other words, bear markets give nature the upper hand. It is now harder than ever to stick to the disciplines that can override your genetic impulses, but it also has never been more important.

Email: intelligentinvestor@wsj.com. Watch a video of Jason Zweig undergoing tests of his investing brain at WSJ.com/PersonalFinance.