

## PROBLEM SOLVING

**Can't stand putting your money at risk? Blame DNA***Monday, July 18, 2011***SUSAN PINKER**

In the endless, and often useless, nature vs. nurture debates there are certain givens that most people accept. Your eye colour is heritable. So are the limits on your height. No matter how many Wheaties I've eaten, for example, I will never be six feet tall. Whether you develop Lou Gehrig's disease comes down to information encoded in your genes, as is your likelihood of being diagnosed with certain cancers. There is even recent evidence showing that political leanings have a heritable component.

But your risk profile as an investor, or whether you've changed cellphone providers recently? These decisions have a genetic angle, too? Yup. According to a huge study of twins published online in *Management Science* in May, a host of financial decisions are moderately heritable. Between 20 per cent and 30 per cent of the variation observed in people's attitudes and behaviour around money is influenced by information coded in their DNA.

David Cesarini, a professor of economics at New York University, along with three colleagues in Sweden, discovered this surprising finding after sending a survey about financial habits to 25,000 Swedish twins, members of the largest twin registry in the world. Prof. Cesarini's study focused on 11,000 of them, a third of whom were identical twins, and two-thirds fraternal twins (the typical split found in nature).

The goal was to see whether identical twins would choose the same options – and make the same financial errors – more often than fraternal twins would. This comparison would give the researchers a window on how central genes are to people's biases about money.

The researchers chose twins as their subjects because identical twins share 100 per cent of their genetic material, while fraternal twins share only 50 per cent (the same level as any two siblings). By comparing the financial decisions of the two types of twins, the economists could investigate the degree to which reasoning errors in one twin would predict the same pattern in the other. For example, how accurately can genetic information forecast a person's ability to exert self-control when a large reward is delayed? How likely are you to procrastinate about your bills, then pay a premium because you were late?

The researchers found that as much as 42 per cent of the diversity observed in financial decision-making could be predicted based on a person's genetic background.

"The first thing we studied was loss aversion, the idea that people are much more likely to gamble [to resurrect their assets] when they're losing money. We asked subjects, 'Would you accept a 50-per-cent chance of winning 2,500 Swedish kroner if you have the same chance of losing 1,000?' In order to reject such gambles you'd have to be sensitive to small losses – you'd be very loss averse," Prof. Cesarini said.

Most of us think this kind of skittishness is learned at our parents' knees. That's only partially true, according to this study, which found that identical twins resembled each other in their loss-aversion patterns. Knowing how one identical twin responded allowed Prof. Cesarini to predict the other twin's response with better accuracy than if they had been fraternal twins (who, of course, share fewer genes). "A lot of people find this provocative because they assume that any similarities between relatives is due to what they learn at home," he told me. "But we now know that much of the resemblance one observes between relatives reared together is due to their shared DNA."

Of all the financial biases the team studied, the one that most resonated with me was "default bias," or how likely a person would choose the status quo when better options become available. Cellphone and Internet providers rely on people like me, whose ancient service plans get renewed by default – not the most rational choice, especially when competition heats up. Not only am I not alone, Prof. Cesarini found, but such "sloppiness" has a heritable component.

Sweden's telephone service and electricity used to be a monopoly, so to test for default bias, all Prof. Cesarini had to do was ask a simple question: "A few years ago it became possible to switch electricity and telephone providers. Have you switched?" He found that about half of the subjects hadn't switched; default bias was clearly a strong effect, "which suggests problems with procrastination and self-control." Ouch.

Still, a genetic basis for such behaviour doesn't mean it's immutable, Prof. Cesarini notes. Near-sightedness is largely genetic but inheriting the trait simply means you need to wear glasses. So what about folks with a leaning toward default bias, or loss

aversion? Has anyone started to identify some of the gene clusters involved, and is there an easy fix for us? Not a chance, was his reply. If we're still struggling to pinpoint the genes for height, then finding the DNA sequences linked to bill payment is still a long way off.

*Susan Pinker is a psychologist and author of *The Sexual Paradox: Extreme Men, Gifted Women and the Real Gender Gap*.*

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