

Ben's question

BY JENNY NICHOLLS

NATURE VIA NURTURE: Genes, experience and what makes us human, by Matt Ridley (Fourth Estate, \$39.99).

HE IS NINE YEARS OLD, AND arrestingly beautiful: blond, with dark, almond-shaped eyes and a glowing skin that takes to summer. The other day, at school, the children in his class were given a list of personal questions. One of the questions was: "What is your goal for the year?"

His grandmother was there to help him. She explained the question. He looked at her. He banged his head on the table with frustration. "It's in there." He meant: the answer is in my head. "It won't come out." He jabbed at the piece of paper. "Would you like to be able to answer the question?" asked his grandma, after a few failed attempts. "Yes! Yes!" he said, beaming, with the immense relief of a habitually misunderstood tourist in a foreign land.

So they wrote that down. Ben would very much like, as his goal for the year, to be able to answer that question.

Ben has many qualities: he is gentle, fun and brave. You could say I'm biased: he's my nephew. He lacks, in the end, only one thing. A mere protein.

The lack of that protein has changed Ben's life. The protein is coded for by a gene. In Ben's case, the gene is silent. The muteness of this gene has, by caustic irony, made it very difficult for Ben to learn to speak. Among other things. The gene is there, in every one of his cells, but it has been switched off, by accident. The accident, a mutation, a kind of stutter, first happened, with little fanfare, to one of Ben's great-great-grandparents, on his mother's side.

The mutation is called Fragile X, and it may take a few generations to really stick the knife in. It is the most common form of inherited mental retardation. Around one in 250 women, and one in 500 men carry the mutation. (Public Health Notice: if you have a blood relative with an unexplained learning disability, you may want to be tested.) Ben's six-year-old brother James also has Fragile X.

Our family has thus been confronted with the awesome effects of a single gene. When Ben and James were diagnosed, the rest of us were tested, too, everybody, distant cousins, including some who doubted that they might be affected.

Not many people have heard of Fragile X, as it was only discovered in 1991. Not even the Ministry of Education, it seems,



who have, incredibly, told Ben's mother that he doesn't fit their criteria for classroom help. So his grandmother comes to school, every day she can, to help interpret the world to Ben, and Ben to the world.

Because the thing about the effects of genes is, as Matt Ridley asserts in his book *Nature via Nurture*, that they respond to the environment. And it's critical to try to understand them. Ridley: "Environmental influences are sometimes less reversible than genetic ones." In other words, nature (Ben's genome) requires nurture (grandma explaining things in class) to help him reach his potential. Understanding exactly what is wrong with Ben has been crucial in understanding his behaviour, and working out ways to help him. But it's a race against time: like everyone else, his rate of learning will tail off in a few years' time, as anyone who has tried to learn a language in adulthood knows. For Ben, every day is a serious cognitive battle, in a lonely war of (future) independence.

Ridley is already notorious for his book *The Red Queen*, which I recommend for anyone curious about the Difference Between Men and Women. His new book takes on the old argument – what makes us? Our genes or our environment? – and comes up with something new. "The discovery of how genes influence behaviour, and how human behaviour influences genes is about to recast the debate entirely," he writes.

Ridley is one of the best popular science

Anita, James and Ben: the X factor.

writers around. He's erudite, original, unafraid of complexity, with an ability to grasp the most fascinating implications of the latest genetic research and explain them: "Pause here to roll that idea around your mind a few times to appreciate just what science can do these days: they use viruses to turn up the volumes of genes in the brain of a rodent. The result is to facilitate partner preference formation, which is geekspeak for 'make them fall in love'."

For love does indeed seem to be an instinct, which is really not that surprising for those who have felt the hungry force of it: what is truly arresting is that they can now scan it, and watch it happening on a screen, while you are feeling it.

Few understand the complexity of human nature as well as Ridley. Each chapter of *Nature via Nurture* is so packed with facts, revisionism and sheer miracles of condensation that you keep wanting to read his sentences aloud. This, from his prologue, samples the book's ambition and flavour well: "Human nature is indeed a combination of Darwin's universals, Galton's heredity, James's instincts, De Vrie's genes, Pavlov's reflexes, Watson's associations, Kraepelin's history, Freud's formative experience, Boas's culture, Durkheim's division of labour, Piaget's development and Lorenz's imprinting."

This is quite a read. I heartily hope, one day, Ben will.