Destiny’s child

In “Blueprint” Robert Plomin argues that genes are by far parents’ biggest influence on their children

HUBRIS WINDS through the history of genetics like a double helix. “We used to think our fate was in our stars,” james Watson, one of the scientists behind the discovery of DNA, declared in 1989. “Now we know, in large measure, our fate is in our genes.” The implications were clear. Unravelling the genetic code would bring an exquisite understanding of bodies and their afflictions but also of minds. After the completion of the human genome project, which Watson initially led, such hopes faded. Individuals’ physical or mental characteristics, and their susceptibility to diseases, turned out to be extraordinarily complex. Some of the swagger went out of genetics. Now it is back.

In “Blueprint” Robert Plomin, a psychologist and geneticist, explains the advances behind this resurgent optimism—and their consequences for the science of human behaviour and psychiatric illness. He is well placed to do so: for more than 30 years he has studied the interplay of genes and the environment and their effects on personality. But Mr Plomin’s enthusiasm for his subject—he calls himself a “cheerleader”—means the ramifications are not explored evenhandedly. “Blueprint” is absorbing. For those with a disposition less sunny than Mr Plomin’s, it is also alarming.

For much of the 20th century, psychology was dominated by the idea that human nature is a blank slate embellished by upbringing and environment. “Blueprint” begins by describing how Mr Plomin and others have demonstrated that, on the contrary, behavioural differences are strongly influenced by genetics. Studies of adopted children indicate that in disposition they more closely resemble their genetic parents than their adoptive ones. Even when they are reared apart, identical twins are more alike than the non-identical kind (who are as genetically different as any brother or sister).

Such research shows that, on average, DNA accounts for about half of the psychological differences between people, with the remainder due to environmental factors; the actual proportion varies with the characteristic in question. More recently scientists have combed through human genomes to identify thousands of genetic variants associated with particular traits, from height and weight to educational attainment and neuroticism. Tests costing less than £50($65) can measure genetic propensity to different outcomes—to be overweight, or to go to university.

For those who imagine all that leaves enough wriggle room for benevolent parents or teachers to exert an influence, Mr Plomin has bad news: these environmental factors are themselves substantially influenced by genes. For example, his work shows that genes account for about a third of the differences between the television viewing habits of children. Worse, the remaining tranche of environmental influence appears to be mostly attributable to unpredictable events rather than, say, being brought up in a house full of books.

These findings, says Mr Plomin, imply that “parents don’t make much of a difference in their children’s outcomes beyond the genes they provide”; DNA is a “fortune teller” that “makes us who we are”. Environmental effects are “important”, but “there’s not much we can do about them”.

Mr Plomin insists that, armed with their genetic test scores, individuals can take action to counter or augment their innate proclivities; but they are hardly likely to succeed if their psychology is as delimited by genes as he suggests. An equally plausible possibility is that these scores will be used to stigmatise genetic “have-nots” or to justify discrimination. This is the high road to eugenics, about which Mr Plomin is largely silent.

Instead he advocates the use of such scores when choosing between candidates for a job. Yet a person with high scores for traits associated with coding skills is not necessarily a good programmer—they merely have a higher likelihood of being one. A candidate who had demonstrated their aptitude for the job would feel rightly miffed to be passed over in favour of a genetically gifted incompetent. Likewise, though doctors may find it useful to know that a patient is genetically predisposed to be obese, the best way to establish their weight is to ask them to step on the scales.

These are problems of emphasis rather than accuracy. But in a field as ethically fraught as genetics, even that can be troubling. For instance, as Mr Plomin notes, the size of the genetic component of a particular trait—its “heritability”—varies between different populations. The heritability of educational attainment in Norway has increased since the second world war as the country widened access to health care and schools, flattening out environmental effects. That trend seems, worryingly, to have reversed in America in the 21st century. The irony is that the heritability of many traits rises if states do more to provide for all their citizens equally.

You might conclude that without broad measures to tamp down inequalities of opportunity, genes have fewer opportunities to shine. “Blueprint” instead touts the importance of DNA in shaping the individual. Hubris indeed.

wind throught

unravelling

exquisite

affliction