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A Genetic Code for Genius?

At a former paper-printing factory in Hong Kong, a 20-year-old wonderkind named Zhao Bowen has embarked on a challenging and potentially controversial quest: uncovering the genetics of intelligence.

Mr. Zhao is a high-school dropout who has been described as China's Bill Gates. He oversees the cognitive genomics lab at BGI, a private company that is partly funded by the Chinese government.

At the Hong Kong facility, more than 100 powerful gene-sequencing machines are deciphering about 2,200 DNA samples, reading off their 3.2 billion chemical base pairs one letter at a time. These are no ordinary DNA samples. Most come from some of America's brightest people—extreme outliers in the intelligence sweepstakes.

The majority of the DNA samples come from people with IQs of 160 or higher. By comparison, average IQ in any population is set at 100. The average Nobel laureate registers at around 145. Only one in every 30,000 people is as smart as most of the participants in the Hong Kong project—and finding them was a quest of its own.

"People have chosen to ignore the genetics of intelligence for a long time," said Mr. Zhao, who hopes to publish his team's initial findings this summer. "People believe it's a controversial topic, especially in the West. That's not the case in China," where IQ studies are regarded more as a scientific challenge and therefore are easier to fund.

The roots of intelligence are a mystery. Studies show that at least half of the variation in intelligence quotient, or IQ, is inherited. But while scientists have identified some genes that can significantly lower IQ—in people afflicted with mental retardation, for example—truly important genes that affect normal IQ variation have yet to be pinned down.

The Hong Kong researchers hope to crack the problem by comparing the genomes of super-high-IQ individuals with the genomes of people drawn from the general population. By studying the variation in the two groups, they hope to isolate some of the hereditary factors behind IQ.

Their conclusions could lay the groundwork for a genetic test to predict a person's inherited cognitive ability. Such a tool could be useful, but it also might be divisive.

"If you can identify kids who are going to have trouble learning, you can intervene" early on in their lives, through special schooling or other programs, says Robert Plomin, a professor of behavioral genetics at King's College, London, who is involved in the BGI project.

But critics worry that genetic data related to IQ could easily be misconstrued—or misused. Research into the science of intelligence has been used in the past "to target particular racial groups or individuals and delegitimize them," said Jeremy Gruber, president of the Council for Responsible Genetics, a watchdog group based in Cambridge, Mass. "I'd be very concerned that the reductionist and deterministic trends that still are very much present in the world of genetics would come to the fore in a project like this." [...]

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