

Is intelligence inherited: A brief history of IQ test and what makes us smart.

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Abstract

Intelligence and how it is perceived was always a matter of debate throughout history. Several hypotheses gave the genes the lion's share of one's intelligence while others accounted for the high intelligence of someone to its education, environment, and even his mother's womb. On the other hand, other opinions see that someone's intelligence isn't even measurable and that IQ tests are absurd and mostly biased, with the presence of threshold that is uncrossable to them regarding testing one's ability and skill. However, research has shown all the previous points of view can be right and wrong at the same time.

Case #1

In 1995-1997, Robert Plomin, an American psychologist, and geneticist gathered a group of children to perform an experiment. He gathered a group of gifted students chosen from all over America, ages 12 to 14, who excel in their grades, in the top 1 percentile in their respective classes, and have an IQ of about 160. The children were brought together every summer in Iowa to perform the experiments. Plomin and his team believed that those children are the closest they have to a genius and that they must have the best version of each gene that may have an effect and influence one's intelligence. They took a blood sample from each of the children to begin their hunt using little of DNA from human chromosome 6; the reason for choosing human chromosome 6 is based on previous research of Plomin's. Later on, in the experiment, Plomin and his team found on the long arm of chromosome 6, a sequence that was different from other people. This led them to conclude that, if there is a gene for intelligence, it is present in the human chromosome 6 [1].

The First IQ Test.

Alfred Binet, a French psychologist, was asked by the French government in the early twentieth century, to help them decide which students will encounter difficulties in their education; as the French government back then, began making tuition mandatory. Binet, and a colleague of his, Théodore Simon, began the development of a set of problems that may serve the purpose of determining someone's limits regarding academic prowess as instructed by the French government. Later on, they developed what is known as the Binet-Simon Scale, which is the base of every IQ test now, the first IQ test [2].

The test was used then by H.H Goddard on Americans and immigrants, which was considered absurd, as the test was very subjective and biased towards the middle and upper class. But that wasn't the end of it, the test caused unnecessary discrimination between immigrants upon intelligence [3]. The test was also by Robert Yerkes, as he applied it on millions of world war 1 recruits [4]. Despite the results of those tests being ignored, it later affected the use of IQ tests. Later Robert Stemberg, an American psychologist and psychometrician, suggested that there are three types of intelligence: analytical, creative, and

practical [5]. This proclamation emphasized the ignorance of both Yerkes and Goddard, and their false use of IQ tests.

Case #2: Beth and Amy

Twin sisters, Beth, and Amy were put for adoption, they were separated by a Freudian psychologist to do an experiment. The experiment's goal was to measure the effect of the family and inside the house environment on one's intelligence and personality.

Amy was adopted by an overweight, insecure, poor family that struggled in society, and on top of that, with an uncaring mother. Amy turned out to be neurotic and introverted. Beth, on the other hand, was put in a rich, relaxed, loving, and cheerful family, like the ones on TV. It was expected that Beth will turn out as an extroverted, easy-going, cheerful girl. However, the results were nowhere near that; she turned up just like her sister [5].

Case #2: intensified

In 1997, Thomas Bouchard, an American psychologist, and geneticist researched pairs of separated twins from all over the world; to compare their intelligence and personality, just like with Beth and Amy.

The highest correlation in his studies was between twins reared together, twins that weren't separated. They

shared the same genes, womb, and family. However, the most surprising correlation was between adopted children from different families who were reared together. They only shared the family, and there was no correlation, this led to the conclusion that family did not affect at all on one's intelligence and personality.

Conclusion

Francis Galton, an English Victorian era statistician, wrote an analogy once that said "Many people have amused themselves with throwing bits of sticks into a tiny brook and watching their progress; how they are arrested, first by one chance obstacle, then by another; and again, how their onward course is facilitated by a combination of circumstances. He might ascribe much importance to each of these events, and think how largely the destiny of the stick had been governed by a series of trifling accidents. Nevertheless, all the sticks succeed in passing down the current, and in the long run, they travel at nearly the same rate" He was implying that if children were exposed to better education in a great amount it affects their IQ dramatically but only for a temporary period which was somewhat true. You could excel in fifth grade and your friend would fail, but that doesn't mean it can't be the way around in ninth grade. And as in the experiment of Beth and Amy, and in Bouchard's experiment, the family was somehow proved to have no effect at all. A lot of other studies had the cause of uncovering which affects our intelligence the most. It's believed that half of your IQ was inherited, one fifth formed upon your surrounding environment, and the rest was formed in the womb and others.

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