

Is intelligence effected by genes or environmental?

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Intelligence is “the ability to learn, understand or deal with new situations” or “the ability to apply knowledge to manipulate one’s environment or to think abstractly”. It is a quite broad subject and is a complex trait, which is a “result from variation within multiple genes and their interaction with behavioral and environmental factors”. Therefore it is impossible to choose one side to argue for whether genes or environment effects intelligence. Genes are what cause the substantial difference, but they are not the whole story. Environment is a factor that cannot be separated from looking at intellectual ability. In a more concise wording, Gene is the base of intelligence and environment are the blocks on top.

Many researches are done about the percentage of genetic and environmental factors effecting ‘intelligence’. It gives a general idea about the percentage of each cause: genetic, and environmental. Even though the statistics differ by researchers, ‘Kings College London’ theorized that genetic predisposition accounted for 54-65% of difference in children’s test score. This finalized that Genetic traits effect most of intelligence and external factors, like environment, effects around 20%. Even though it might be a broad study which only compares the numbers of the percentages, I believe this sets an idea that genes have an immense affect.

There is a viral experiment that scientists do when it comes to looking at intelligence. It is the sibling and twin studies. Giving evidence to genetical predisposition, for sibling studies it is said that “siblings have more similar IQ than adopted siblings in same environment and identical twins have more similar intelligence than fraternal twins.” (Plomin & Spinath, 2004). Moreover in the twin studies sciences look at Monozygotic (identical) twins and dizygotic (fraternal) twins. Monozygotic twins are genetically equivalent human beings and, in contrast, dizygotic twins are from two separate eggs sharing 50% of genetic make up. The result, showing that identical twins have more similar IQ scores than fraternal twins, leads to a conclusion that heredity influences intelligence greatly—the studies often conclude with a statistic of 70 percent of IQ heritable and 30 percent not.

Nevertheless, “Gene operate in an environment -- they get turned on and off depending on what is happening in the environment.”(Stough) The evidence is shown in a similar study that uses identical twins as the subject. “Identical twins reared apart have IQ's that are less similar than identical twins reared in the same environment.” This shows the other part of this twin study: environmental effects.

Examples of other environmental influence on intelligence would be school attendance(Ceci, 2001), breastfed, social economical status(Stough), friend or family group(McGue & others, 1993), and toxic substances, or teratogens in children’s prenatal or early postnatal environments(alcohol, drugs, radiation) (e.g., Michel, 1989; Neisser et al., 1996; Streissguth, Barr, Sampson, & Bookstein, 1994; Vogel, 1997; Vorhees & Mollnow, 1987). School attendance is basically how the time you spend on learning would definitely impact your intelligence, which is connected to the social economical status, since without money education could not be provided. Also being breastfed during the first three to five months of life score higher on IQ tests at age 6 than same-age children who were not breastfed(Kramer & others, 2008). The environmental influence differ from minor impacts to major impacts, that can possibly impact health severely.

In conclusion, clearly both nature and nurture influence intelligence. Genes and environment is inseparable. Heredity has the biggest affect on intelligence, as the base and how susceptible or impervious a child is to particular environmental influences. However since genes are influencing how resistant, exposed a child is to environmental influences, without looking at the environment, the study is incomplete. Evidence is given from general percentage studies, sibling and twin studies, and minor to major environmental factors.