

Family, Culture Affect Whether Intelligence Leads to Education

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Intelligence isn't the only thing that predicts how much education people get; family, culture, and other factors are important, too. A new study published in *Psychological Science*, a journal of the Association for Psychological Science, compares identical and fraternal twins in Minnesota and Sweden to explore how genetic and environmental factors involved in educational differ in countries with different educational systems. Family background can get an education even for people of low intelligence, the authors conclude—but helps much more in Minnesota, than in Sweden.

The genetic similarity of a pair of twins depends on whether they're identical or fraternal. Identical twins share all of their genes; fraternal twins only share roughly half of the genes on which humans can differ. But either way, when the twins grow up in the same environment it's possible to use them to study how much of the population variation are can be attributed to genetic difference and how much is due to environmental variation.

The researchers used the Minnesota Twin Family Study and a set of Swedish databases that included the Swedish Twin Register and the Military Service Conscription Register. From these databases, they extracted intelligence test scores and educational records for thousands of pairs of twins.

More intelligent people had more education in both Sweden and Minnesota, although intelligence and educational attainment were more closely related in Sweden. The effects of environment were different in the two places. For example, in Minnesota, family environment was more important in influencing whether people with low intelligence got more education. On the other hand, in Sweden, family environment had more influence for people of high intelligence.

Wendy Johnson, of the University of Edinburgh and the University of Minnesota, speculates that this could be because of the different educational systems in the two countries. "In the United States, you can get a college education by having enough money to get into a school. In Sweden, that's not really so possible. You have to have the grades and test scores that they're looking for in order to get into schools. And it's free. In the United States, it's rarely free."

In other words, a Minnesotan family that values education and has the money can pay to get a less intelligent child into college, while a Swedish family doesn't really have that option—but every Swede with high grades and test scores can get a free education. Johnson coauthored the study with Ian J. Deary of the University of Edinburgh, Karri Silventoinen of the University of Helsinki, and Per Tynelius and Finn Rasmussen of the Karolinska Institute.