

Sensitive genotypes yield disadvantage in poor families, but advantage in wealthier ones

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The same genotypes yield better or worse economic outcomes compared to one's sibling, depending on parental income, according to a new study by a University of Kansas researcher.

The study's results suggest that children with sensitive genotypes who come from low-income homes will be less financially successful than their same sex sibling without those genotypes. But children with those same genotypes from a high-income home would actually fare better economically as young adults than their brother or sister, said Emily Rauscher, a KU assistant professor of sociology.

"People have historically thought of genes as being a key way that parents transmit their advantages and disadvantages to their kids, and this casts some serious doubt on that," Rauscher said. "It's not that genes are inherently good or bad. It's the environment that determines how these genes matter."

The journal *Social Science Research* recently published her findings online. Rauscher's study is the first to combine intergenerational mobility and sensitive genotypes.

She used data from Add Health, a nationally representative sample of U.S. adolescents in grades 7-12 beginning in 1994-95. The sample revisits more than 15,000 youth in subsequent years through 2007-08.

Within the sample, she identified 630 siblings to conduct her analysis on economic mobility and genetic sensitivity.

Children who had a high genetic sensitivity score are generally believed to have genotypes implicated in behaviors related to issues with attention, aggression and depression, for example. Some research suggests these genetic variants can influence people's chances of being diagnosed with clinical depression, attending college, or engaging in criminal behavior.

Rauscher said it's important to note that children with the same sensitive genotypes achieved very different economic outcomes, such as household income, earnings, and education, based on the environmental context their parents' income provided. One possible explanation for this finding is different responses to the same behaviors.

"A high-energy kid in a wealthy context could be viewed as a go-getter, very engaged or very interested in a topic," she said. "That same behavior in a poor context could be viewed as negative or worthy of punishment."

The findings likely come at a crucial time in examining income inequality because Harvard researcher Robert Putnam and others have found it is much more difficult today than it was 50 years ago for children of [low socioeconomic status](#) to advance up the ladder.

"Now the stakes are higher if you happen to be a family at the lower end of the spectrum," Rauscher said, "because life is much different than it is for kids at the higher end of the income spectrum."

Her study also could have wide-ranging policy implications because it seems to bolster the case for a basic minimum income in some fashion, she said.

"We could wipe out all of the negative effects of these genotypes if we raised a family's income level to the point where these genotypes could be positive - around \$50,000," Rauscher said. "We could save a lot of money in the long run if we could give every household with children a minimum basic income where these genotypes start to become beneficial."

A basic minimum income could be an investment to stem higher costs down the road, she said, because children who carry sensitive genotypes and are from low-income families are more vulnerable to ending up in poverty as adults, with all of its associated costs to society. If these same children were raised in higher [income](#) households, the results suggest they would earn more money, contributing rather than depending on tax revenue.

"We're wasting a lot of money on avoidable problems that are created simply because the environment is not good enough for [children](#)," Rauscher said. "Social institutions would function at a better level if we could get rid of all these negative potential effects."

More information: Emily Rauscher, Plastic and immobile: Unequal intergenerational mobility by genetic sensitivity score within sibling pairs, *Social Science Research* (2017). [DOI: 10.1016/j.ssresearch.2017.02.005](#)

Provided by University of Kansas

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