

Economic status, genetics together influence psychopathic traits

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Researchers studying the genetic roots of antisocial behavior report that children with one variant of a serotonin transporter gene are more likely to exhibit psychopathic traits if they also grow up poor.

The study, the first to identify a specific gene associated with psychopathic tendencies in youth, appears this month in the *Journal of Abnormal Psychology*.

People with psychopathic traits generally are more callous and unemotional than their peers, said University of Illinois psychology professor Edelyn Verona, whose graduate student Naomi Sadeh led the study.

"Those with psychopathic traits tend to be less attached to others, even if they have relationships with them," Verona said. "They are less reactive to emotional things in the lab. They are charming and grandiose at times. They're better at conning and manipulating others, and they have low levels of empathy and remorse."

Although psychopathy is considered abnormal, these traits may be useful in certain circumstances, Verona said.

"For example, these folks tend to have less anxiety and are less prone to depression," she said, qualities that might be useful in dangerous or unstable environments. In most cases, their cognitive abilities are also intact.

Studies of psychopathy often focus on those in prison for violent crimes, but most people who commit such crimes are not psychopathic, Verona said.

Unlike the detached, methodical psychopath, violent offenders are often highly emotional and impulsive, and their [cognitive abilities](#) are sometimes impaired.

Early research on psychopathy sometimes confused these two "subtypes," Verona said. "But our research suggests that offenders are very heterogeneous in terms of causal factors," she said. "That means that although they end up in similar places, they don't get there through the same pathway."

The new research focused on two variants of the serotonin transporter protein gene. This gene codes for a protein that transports serotonin from the synapse into presynaptic neurons. Serotonin is a neurotransmitter that regulates mood, sleep and other functions including memory and learning.

The two variants, or alleles, of the serotonin transporter protein gene differ in length. The longer allele produces more of the transporter protein, which researchers suspect results in more serotonin being shuttled out of the synapse. How this affects brain function is unclear, however; less serotonin in the synapse could mean less - or more - serotonin in the brain.

Previous studies have found that those who are highly impulsive and aggressive tend to have less brain serotonin than their peers, while people with psychopathic traits generally have higher brain serotonin levels.

Other research has found an association between the highly impulsive personality type and the shorter allele on the serotonin transport [protein](#)

gene.

In two separate studies, Verona, Sadeh and their colleagues found that pubescent and prepubescent children with the longer alleles for the transporter gene scored higher than other children on psychopathic traits if they also had low socioeconomic status. These children reportedly exhibited less empathy, they were more prone to arrogance and deceitfulness and were less emotionally responsive to negative events than their peers. In contrast, youth with the long alleles who also had high socioeconomic status scored very low on psychopathic traits - suggesting that the long allele is susceptible to socioeconomic environment, "for better or for worse."

Children carrying the short alleles for the same gene scored higher on impulsivity, regardless of their socioeconomic status, the researchers found.

"This is the first genetic evidence that these two types have different origins," Verona said.

Provided by University of Illinois at Urbana-Champaign

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