Genes, adversity linked to crime in incarcerated sample

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Todd Armstrong of Sam Houston State University studies the links among genes, environment and crime. Credit: Harriet McHale/SHSU

Researchers at Sam Houston State University have found a genetic characteristic that interacts with childhood adversity to predict higher rates of crime in an incarcerated sample.

The study is the first in a series that will examine contributions of

genetic and environmental variations to criminal behavior. Published in *Psychiatric Genetics*, this study examines the role of monoamine oxidase A (MAOA), which has been linked to aggression, violence, and various types of childhood adversity in prior research. The study found MAOA genotype interacted with childhood adversity to predict self-reported criminal behavior and arrest rates for both property and violent crime.

"These findings indicate that gene-by-environment interactions are important for understanding variation in crime amongst populations with high base rates of criminal activity," said Todd Armstrong, principal investigator of the study.

The study was based on a sample of about 100 inmates from a correctional institution in the Southern United States. Sample members were convicted of a wide variety of charges, including violent crimes, drug offenses, property crimes, disorderly conduct and weapons offenses. In addition to collecting and analyzing DNA, researchers conducted surveys of offenders and examined their criminal histories.

"No one has done this type of research with an incarcerated sample in North America," said Armstrong. "It can help us understand the context and processes that link genes with criminal behavior and provide an avenue for understanding individual variation in the tendency to engage in crime."

In addition to unravelling the links among genes, childhood adversity and crime, the findings may help to develop better intervention programs for at-risk children in the future.

The study was a collaborative effort between the Department of Criminal Justice and Criminology, and the Department of Forensic Science at Sam Houston State University. It was co-authored by fellow faculty members Brian Boutwell and David Gangitano as well as

graduate students Shahida Flores, Mary Symonds and Shawn Keller.

The inter-disciplinary approach has led to a new course at Sam Houston State University in Behavioral Genetics, which provides students with an understanding of behavior genetics and the influence of genes and the environment on emotion, personality and behavior.

The research group is currently exploring the relationship between a number of genetic characteristics and different forms of crime and delinquency in the incarcerated sample and among a sample of University students. These studies are considering potential links between genetic characteristics and stalking and the role that genetic characteristics related to serotonin function play in the development of patterns of crime and delinquency.

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