

Courts face challenges when linking genetics to criminal behavior

4 June 2014

Studies suggest that some people may be at increased risk of criminal behavior due to their genes. Such research holds potential for helping judges and juries with some of the difficult decisions they must make, but it also brings a substantial risk of misinterpretation and misuse within the legal system. Addressing these issues will be of critical importance for upholding principles of justice and fairness, according to an essay being published in the June 4 issue of the Cell Press journal *Neuron*.

"Genetic evidence, properly used, could assist with judgments regarding appropriate criminal punishments, causes of injury or disability, and other questions before the courts," says author Dr. Paul Appelbaum, who directs Columbia University's Center for Research on Ethical, Legal & Social Implications of Psychiatric, Neurologic & Behavioral Genetics.

Genetic evidence is being offered in criminal trials to suggest that defendants have diminished understanding of or control over their behavior, most often in arguments for mitigating sentences—especially for defendants facing the death penalty. Genetic evidence may also play an increasing role in civil trials regarding issues such as causation of injury. For example, employers contesting work-related mental disability claims might want claimants to undergo genetic testing to prove that an underlying disorder was not responsible for their impairment.

"The complexity of genetic information and our incomplete understanding of the roots of behavior raise the possibility that genetic evidence will be misused or misunderstood. Hence, care is needed in evaluating the extent to which genetic evidence may have something to add to legal proceedings in a given case," says Dr. Appelbaum.

Moving forward, a number of questions must be addressed. For example, to what extent do specific

genetic variants make it more difficult to understand or control one's behavior and what are the biological mechanisms involved? Also, how can we respond to individuals with genetic predispositions to [criminal behavior](#) to diminish the risk of recidivism?

Dr. Appelbaum notes that it will be an ongoing challenge for both legal and genetic experts to monitor the use of genetic data in the courts to ensure that the conclusions that are drawn validly reflect the science. Without such efforts, judges and juries may overestimate or underestimate the conclusions that can be drawn from [genetic evidence](#), thus unfairly distorting the legal process.

More information: *Neuron*, Appelbaum et al.: "The Double Helix Takes the Witness Stand: Behavioral and Neuropsychiatric Genetics in Court." [http://www.cell.com/neuron/abstract/S0896-6273\(14\)00441-3](http://www.cell.com/neuron/abstract/S0896-6273(14)00441-3)

Provided by Cell Press

APA citation: Courts face challenges when linking genetics to criminal behavior (2014, June 4) retrieved 20 November 2019 from <https://medicalxpress.com/news/2014-06-courts-linking-genetics-criminal-behavior.html>

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