Immaturities in Voluntary Responses and Incentive Processing in Adolescence: Implications to Juvenile Law

Law and Behavioral Biology Speaker Series
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Adolescence is a period of development characterized by impulsive and risk-taking behavior. Accumulating evidence shows that while adolescents have the capability to exert adult level voluntary control of behavior, immaturity still undermines decision making. Our neuroimaging studies have found evidence for particular immaturities during adolescence including limitations in the ability to monitor their performance, sustain voluntary control, and be affected by reward incentives. These limitations in voluntary control may be due to immaturities of top-down executive control of behavior derived from brain functional integration and white matter integrity. We propose that evidence for immaturities in the brain systems of adolescents that support voluntary control should be taken into account when considering if minors should be tried as adults in the criminal justice system. First, limitations in the ability to exert voluntary control could underlie the poor decision making and impulsivity present in criminal acts of minors. Secondly and importantly, given that minors have not yet reached adult levels of control or brain maturation, they are still in a period of plastic development making them more responsive to rehabilitation than a mature system. However, there are important caveats in how developmental neuroscience can inform the law, including: not being able to provide evidence at the level of the individual and making inferences from basic laboratory-based processes to complex criminal and moral behavior.

Cosponsored by the Center for Integrative & Cognitive Neuroscience. For more information contact Jennifer Overstreet, (615) 322-4209 or e-mail joverstre@vanderbilt.edu.