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The neuropsychology of violence

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The neuropsychology of violence has been of scientific interest since brain lesions were noted to profoundly alter social behaviour. We recently reviewed this area of research for the upcoming Cambridge Handbook of Violence. There, we first note that brain lesions rarely give rise to physically violent behaviour, even when acquired early in life. We also note that the bulk of what we know about the neuropsychology of violence comes from two parallel literatures in which violence may or may not be present, i.e., studies of antisocial behaviours (criminality and delinquency) and of psychiatric disorders. Although there are few neuropsychological studies of violence per se, they do support the role of underlying neuropsychological factors. In fact, studies quantifying physical aggression or violence in their sample characteristics report large effect sizes for measures of executive function, but also for measures of general intellectual abilities. Such studies may, for example, separate physical aggression from hyperactivity, and separate violent from property offending. There is evidence that theft requires greater cognitive abilities than other criminal acts. Therefore, use of a global index of delinquency, criminality, and externalizing or antisocial disorders could mask relationships with neuropsychological function. Alcohol and other substance use, which is involved in many or perhaps even most instances of violence, is another important potential confound. However, recent studies of preschoolers, in whom substance abuse is virtually never an issue, are also finding relationships between poorer neuropsychological function and early physical aggression. The strategy of specifying physical aggression or violence and controlling for comorbid conditions is helping to clarify the key correlates in this literature. Specifying the natural history of such behaviours also helps sharpen the focus. However, neuropsychological factors tend to explain at most 10% of the variance in measures of violence. Therefore, future studies need to examine the moderators that may increase our ability to predict violence risk from neuropsychological dysfunction.