
Symposium FA-1
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The Neuropsychology of Aggression, Violence and Psychopathy

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The goal of this symposium is to expand our understanding of the neuropsychological mechanisms that influence the severity and expression of violent or aggressive behaviour. To this end we will summarize and synthesize recent findings in neuropsychological research in humans.

Evidence suggests that individuals with conduct disorder or psychopathy, and especially those with a history of physically aggressive behaviour (Séguin), exhibit specific neuropsychological deficits, and have reduced levels of fear (Blair), ANS arousal and cortisol (Van Goozen). Raine showed that frontal and temporal lobe abnormalities are associated with violent behaviour, such that prefrontal deficits have been associated with behavioural disinhibition, increased risk taking, and impulsivity, whereas the temporal lobes, among others, are involved in affect regulation and sexual behaviour. Two theories, currently the topic of much research interest, are the somatic marker hypothesis, involving the ventromedial prefrontal cortex, and the response modulation deficit hypothesis. In the symposium research examining the validity of these theories will be presented. Other research suggests that the amygdala plays a crucial role in some of the specific emotional deficits that we observe in those with severe antisocial behaviour. For example, psychopathic individuals are characterised by fearlessness and sensation seeking, and low levels of autonomic arousal as a consequence of which ongoing abnormal behaviour is not inhibited.

To date, most support for these different neuropsychological explanations comes from studies of adult psychopathy and relatively few of these theories have been tested in youngsters. Three presentations (by Blair, Séguin and Van Goozen) specifically involve neuropsychological research in children and teenagers. The 4th presentation combines neuropsychological techniques with testosterone manipulations to improve our understanding of the role of the endocrine and prefrontal systems in aggression. The studies presented show how differences in neuropsychological functioning affect the individual's susceptibility to engaging in aggressive and/or violent behaviour. The implications of the reported findings for the different neuropsychological theories of aggression will be discussed.