COGNITION IN INTERNED ADOLESCENTS
Aspects of executive functions and training

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Akademisk avhandling

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av filosofie doktorsexamen framläggs till offentligt förvar i Nbvh 1031, byggnad Norra Beteendevetarhuset, fredagen den 9 mars, kl. 10:00.
Avhandlingen kommer att förvaras på svenska.

Fakultetsopponent: professor Anne H Berman, Institutionen för Klinisk Neurovetenskap, Karolinska Institutet, Stockholm, Sverige
Title
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Abstract
This doctoral thesis examines adolescents with a history of antisocial behavior with a focus on investigating executive functioning, impulsivity and experiences of everyday executive problems. The thesis further investigates the associations between self-reported and performance-based measures. Finally, it investigates whether processed-based executive function training can influence trained and non-trained executive functions and related scholastic abilities.

Antisocial behavior is a complex concept, associated with high costs of personal, interpersonal and societal nature. In general, people implement the majority of their life´s share of delinquent and antisocial behaviors around the adolescent years, as described by the so-called age-crime curve. This period is associated with rapid cognitive development, and deficits in this period of time have been associated with an increased susceptibility to partake in antisocial behavior. Also, larger impairments are associated with more severe behaviors.

In many western countries, there exist a duality of both welfare and judicial considerations in the case of antisocial individuals who are minors. As compared to adults, persons under the age of criminal responsibility typically face a different combination of rehabilitative and penal consequences from maladaptive, delinquent or antisocial behaviors. In this context, increased understanding of the cognitive underpinnings of antisocial behavior, and how best to support sound cognitive development are therefore relevant to the furthering of rehabilitative practice. This thesis expands on existing knowledge by examining interned adolescents from an executive functions framework and also investigates how it relate to other constructs of clinical relevance.

This is done in three empirical studies. The first two are cross-sectional and aimed at assessing a number of cognitive constructs and associated behaviors. The third study is aimed at examining the effects of a training intervention on said constructs. The studies indicated poorer pre-test performance by the interned adolescents as compared to their non-interned counterparts. However, no deficits specific to any one executive function was discernable. The results also showed that the internees self-reports expressed more perceived problems with inhibiting behaviors and managing unplanned prompts to shift from a planned activity. They also indicated it harder to resist impulsive behaviors related to negative affect, lower premeditative ability, and had more issues with persevering in prolonged tasks. In addition, there were a few connections between the performance-based and the self-reported accounts of executive functioning. Of particular interest was that the majority of group effects in self-reported constructs was related to the specific executive function updating, a finding not previously reported. This executive function has previously been suggested to be antecedent of antisocial behavior though. As for the training, the only substantial improvement was to perceptual speed, which occurred irrespective of training progression or experimental condition. This was mirrored by the posttest self-reports whose rather modest gains were also unrelated to both experimental conditions and training improvements.

In conclusion, executive functioning and trait-based cognition are related to some degree, and both associate to antisocial behavior as operationalized by internment status. Process-based cognitive training can however not feasibly be determined to affect or alter these relations.

Keywords
Interned youth; adolescence; antisocial behavior; executive functions; cognitive training; transfer; performance-based measures; self-assessment; impulsivity