Inhibitory control in adolescents

Yucel et al. (2012) examined how sex, intelligence and temperament were related to inhibitory control in adolescents. Inhibitory control refers “to the ability to flexibly adapt behaviour in the face of cognitive conflict, interference or competition” (p. 347). This type of control also regulates other aspects of mature behaviour such as delayed gratification, inhibiting impulsive behaviour, and planning or organising activities (p. 347). When inhibitory control is impaired in an individual, he or she may be prone to impulsive or compulsive behaviour, which may lead to personal and social problems or even “debilitating conditions” such as ADHD (p. 348).

The researchers used a Stroop task for 153 adolescents (mean age 12.6 years) from Melbourne. They were specifically investigating “the relationship between sex, self-reported and parent-reported temperamental effortful control, and intelligence with different aspects of inhibitory control—namely, strategic (or proactive) control and evaluative (or reactive) control” (p. 347).

Results showed that females were more efficient than males “in their use of strategic control to reduce the magnitude of response conflict” in the task (p. 348). No sex differences were found for evaluative control. “High intelligence was associated with fewer errors for both males and females, effortful control was associated with performance accuracy only in females” (p. 348). Overall, there were clear sex differences in the “relationship of inhibitory control to individual differences in temperamental effortful control in early adolescents” (p. 348).

Generally, females engage in less risk-taking behaviour than males during adolescence. This study supports the idea that behavioural differences may be explained in part, by the sex differences in inhibitory control. These sex differences emerge “at a critical stage in adolescence” (p. 354). Yucel et al., (2012, p. 354) concluded that a better understanding of adaptive behavioural regulation in adolescence would allow researchers to gain a more detailed understanding of how “healthy trajectories” could be developed through the lifespan.