Understanding the impact of early adverse experiences on computational models of neurocognitive processes in adolescents

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Abstract

Environmental stressors present negative consequences for development. However, their impact on relevant neurocognitive processes, particularly in underrepresented samples, is less clear. The current project aims to examine how adverse experiences influence efficiency of evidence accumulation and neural connectivity in adolescents.

The study included 199 adolescents from the Future of Families and Child Wellbeing Study, a population-based longitudinal cohort study with substantial representation of youths from disadvantaged backgrounds. Participants completed an emotional-faces, gender-identification task while undergoing functional MRI. Reaction times (RT) and responses were recorded and fitted with a drift diffusion model. Parameters were estimated using the Dynamic Model of Choice software, which provides a better characterization of the underlying cognitive mechanisms compared with using RTs or cognitive batteries.

Analyses investigating the impact of adverse experiences to drift rate and functional connectivity are underway. Results from this study will provide a better understanding of adversity on neurocognitive mechanisms in adolescents.

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