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Inhibition is not emotion blind: Behavioural and Neural evidence from an Emotional stop signal task

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Abstract

Response inhibition being an essential executive function gets modulated by emotional context adhering to growing evidence. Understanding the reciprocal relationship of emotion and cognition has become crucial. The current study examined the influence of emotional valence at behavioural and electrophysiological levels by using an emotional stop signal task. 14 healthy adult participants completed the ESST task wherein task irrelevant happy, angry, neutral facial expressions served as emotional stop signals while recording brain signals with electroencephalogram. Stop signal reaction time (SSRT) was indexed for behavioural inhibition and neural correlates were assessed using N2 and P300 event related potentials. Stop signal reaction time was significantly shorter for angry faces contrary to happy faces which elicited enhanced frontal N2 amplitudes, whereas larger P300 amplitudes were obtained for happy as compared to angry expressions. The present evidence highlights that response inhibition is not emotion blind rather is modulated in context of emotional valence.