

WITHIN-INDIVIDUAL CHANGES IN PREPOTENT RESPONSE INHIBITION PREDICT EMOTIONAL REACTIVITY IN DAILY LIFE

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Summary: In an experience sampling study, we explored the within-person relationship of momentary emotional reactivity with working memory updating and response inhibition in a general population sample. Our results showed that prepotent response inhibition moderates emotional reactivity to external events, and this shows cognitive control's relevance in effective emotion regulation in everyday life.

Background: The between-person relationship of deficient cognitive control and maladaptive emotion regulation is well-established, yet, it remains to be tested whether the association holds at the within-individual level as well.

Aims: We aimed to demonstrate that within-person fluctuation in cognitive control performance (working memory updating and response inhibition) predicts emotional reactivity in daily life.

Methods: We conducted an experience sampling study (8 two-hourly prompts daily for max. 28 days) where participants were asked to repeatedly perform short N-back and Go-Nogo tasks. We also assessed negative affective states and pleasantness of a recent significant event, whose statistical relationship captures emotional reactivity. Our dataset contained 1103 observations from 116 participants ($N_{\text{Females}} = 89$, $\text{Median}_{\text{Age}} = 40$) from the general population. Using multilevel models, we investigated the within-person effects of N-back and Go-Nogo performance on emotional reactivity.

Results: Go-Nogo performance moderated the within-person association between event pleasantness and negative affect ($z = -2.7$, $p = .007$): when response inhibition was better than an individual's average, they demonstrated lower emotional reactivity. N-back performance did not significantly influence emotional reactivity.

Conclusions: Within-person changes in response inhibition predict the emotional response to perceived stress, which is in line with previous findings regarding between-person relationship of reduced inhibitory control and emotion dysregulation.