Response inhibition in psychopathy: The inhibitory N2 and P3
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Purpose
To investigate the NoGo N2 and P3 in a sample of violent offenders with a full range of psychopathy and non-offender controls.

Results
• Offenders (M = 46 ± 0.4) had more errors of commission on NoGo trials than Controls (M = 32 ± 0.3), p = .035
• This was unrelated to psychopathy
• Both groups showed a strong NoGo N2 amplitude effect, p < .001
• No Group or Latency effects
• Offenders generated smaller P3s at frontal sites, p = .023
• No relation between psychopathy and P3 amplitude or latency

Background
Anterior Cingulate Cortex (ACC):
Heavily implicated in response monitoring and control.1
Considered the generator of the NoGo N2
Reciprocal connections with areas that generate NoGo P3
Psychopathy:
Some reports of diminished inhibitory control under some conditions.3
Evidence suggesting abnormal ACC function during some processing conditions.4,5
Some evidence of abnormal response monitoring during a Go/NoGo task6
Is there evidence of a diminished NoGo N2/P3 in violent offenders diagnosed with psychopathy?

Methods
Participants
• 14 violent offenders (Mean age = 47.5)
• Mean PCL-R score = 25.8
• 14 control participants (Mean age = 46.15 years)

Procedure
• Serial presentation of a series of letters (e.g. X, Y) in alternating fashion
  • Go Condition: Current letter was different from the preceding one
  • NoGo Condition: Current letter is the same as on the preceding trial
• 550 stimuli presented + 30 practice trials
• 1/3 trials NoGo

ERPs
• 128 site Biosemi system
• 512 points per second
• Baseline: 200ms prestimulus
• Offline filtered 1 to 30 Hz

ERPs by Group

Conclusions
Psychopathy was not associated with atypical behavioral response or diminished frontal ERPs under these testing conditions.
Abnormal function of ACC and associated regions may only occur with emotional stimuli7,8 or under testing conditions involving affectively-charged feedback contingencies.8

References
7. Munro et al. Submitted.

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