

SUBCLINICAL LEVELS OF PSYCHOPATHY ASSOCIATED WITH AN AFFECT-SPECIFIC PROCESSING DEFICIT

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Procedure

Subjects

- 67 male undergrads (17-25 yrs)
 - Screened for psychiatric disorders and head injury
 - Psychopathy assessed with *Self-Report Psychopathy Scale (SRP-III)*

Tasks

- Eriksen Letter Flanker
- Difficult Letter Flanker
- Emotional Face Flanker
 - Similar task structure
 - Letter-flanker tasks varied difficulty level
 - Face-flanker required emotion discrimination.

ERPs

- 64 site QuickAmps system
- -600 to -400ms baseline
- Offline filtered 1-30Hz

Results

Face-flanker errors elicited smaller-amplitude ERNs than errors on the letter flanker tasks, $F(2, 88) = 7.04, p = .002, \eta^2 = .14$.

Only face-flanker ERN amplitude predicted SRP-III Total Psychopathy score, $F(1, 42) = 4.77, p = .035$.

The Pe was attenuated on the face flanker task relative to the other tasks. $F(2, 88) = 7.58, p = .001, \eta^2 = .15$.

Pe amplitude was associated with psychopathy on all tasks, and this association was strongest on the face flanker task, $F(1,42) = 9.32, p = .004$.

Background

We have shown that incarcerated violent offenders produce a markedly diminished error-related negativity (ERN) to errors in an emotion-discrimination face flanker task than in a standard letter flanker task and that this reduction was associated with degree of psychopathy within the sample.¹ Such data suggest that psychopathy is associated with limbic/paralimbic abnormalities^{2,3} in the context of relatively normal performance monitoring.

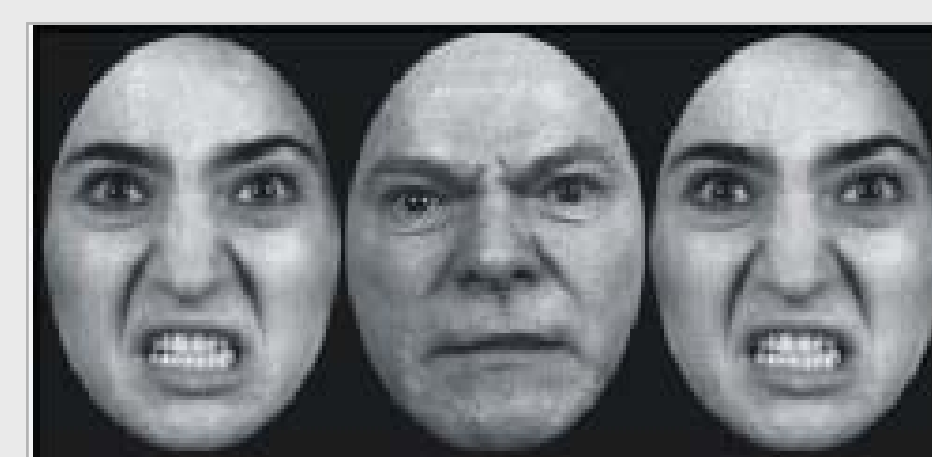
Our Questions:

1. Do affectively-based error monitoring deficiencies vary as a function of psychopathy within a normative range of psychopathic tendencies in healthy undergraduates?
2. Would a psychopathy-related reduction in emotion-based ERNs occur as well for letter flanker tasks at higher levels of difficulty?

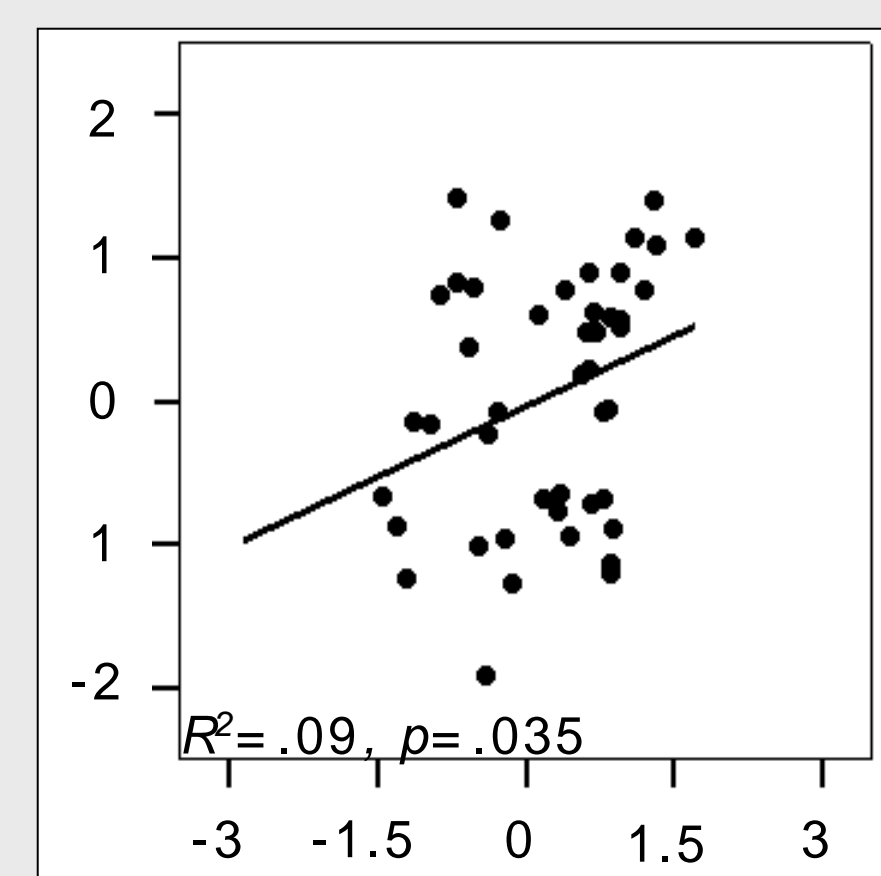
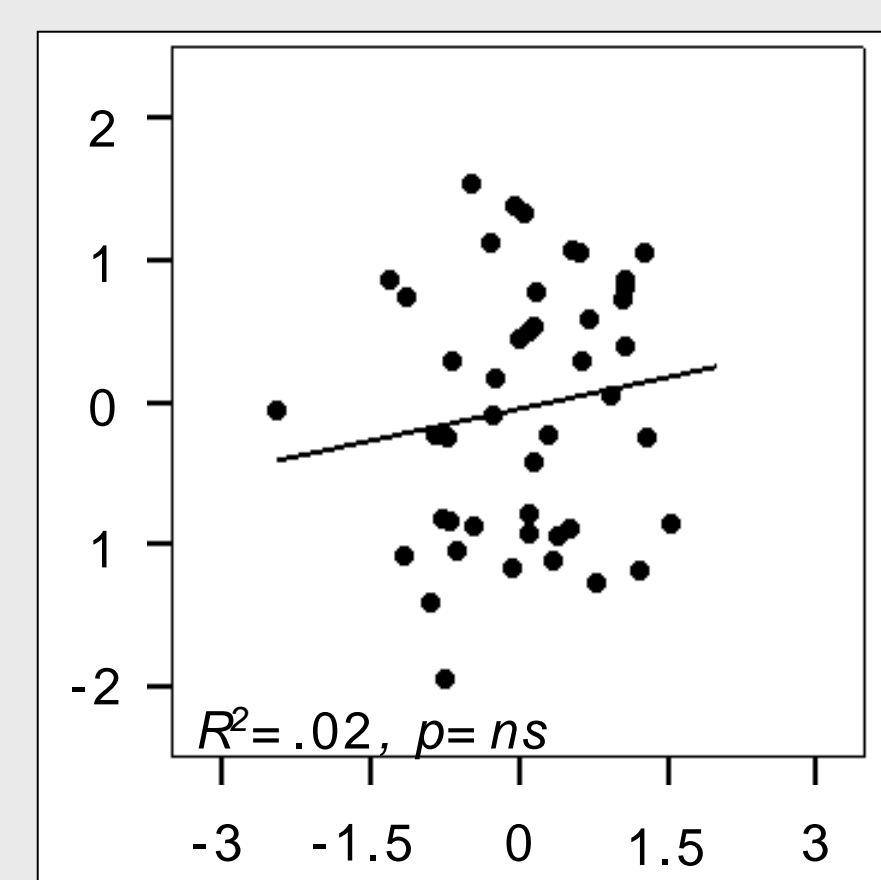
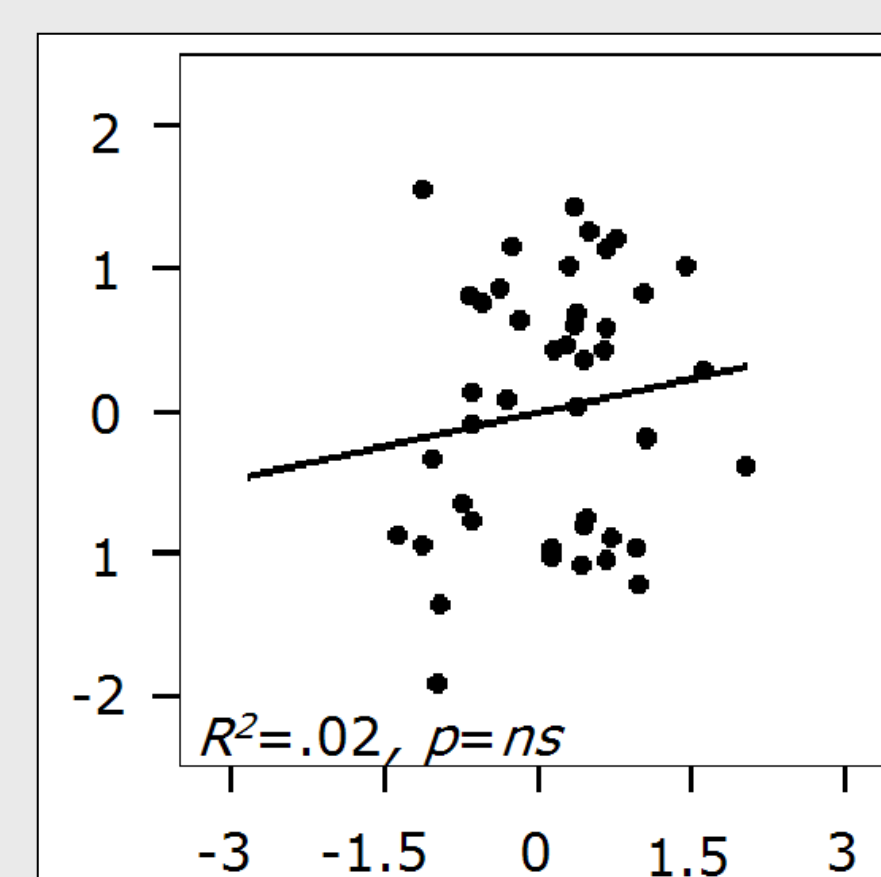
Example stimuli for the easy and hard letter flanker tasks, and for the face flanker task.

HSHH
(easy)

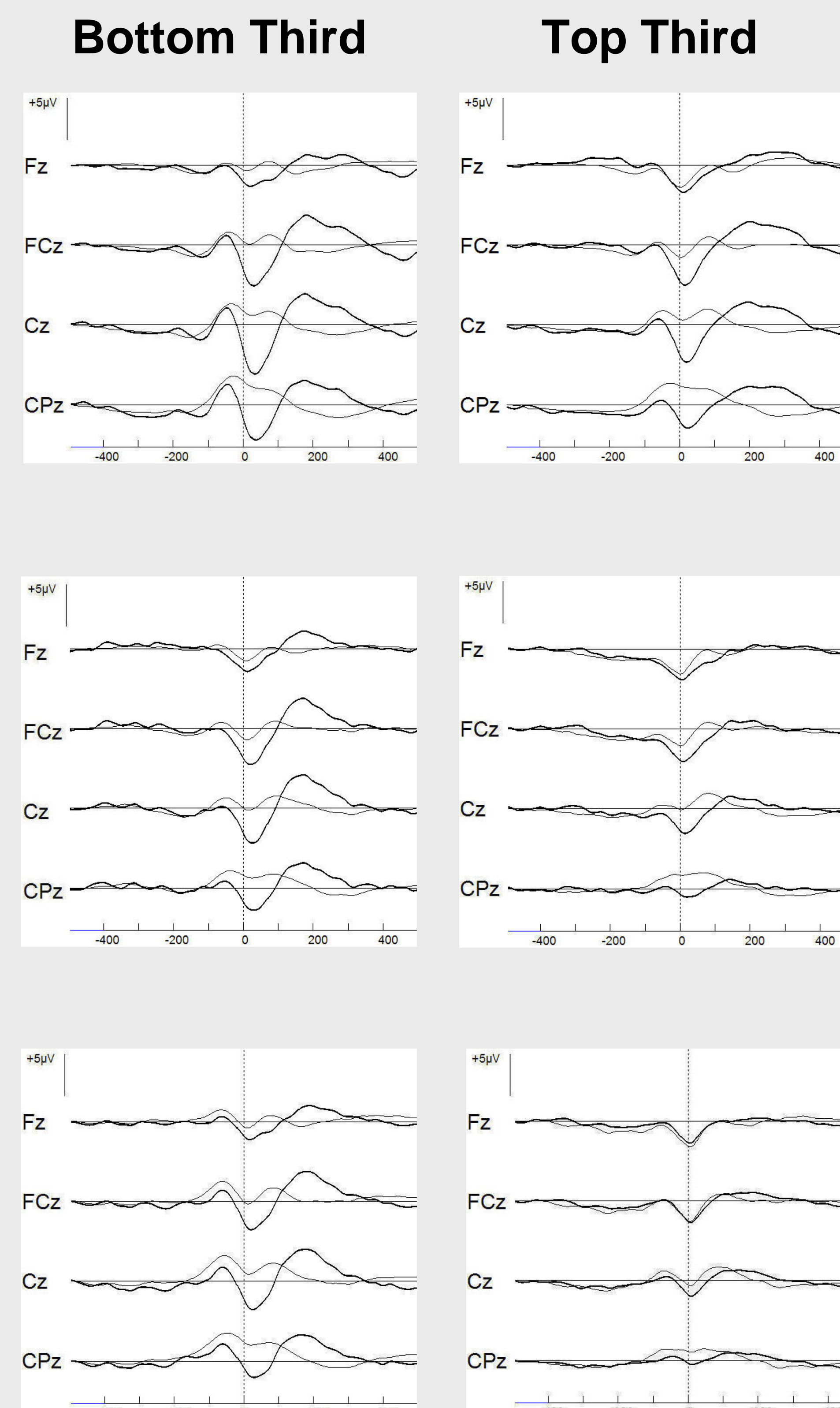
PPXPP
(difficult)



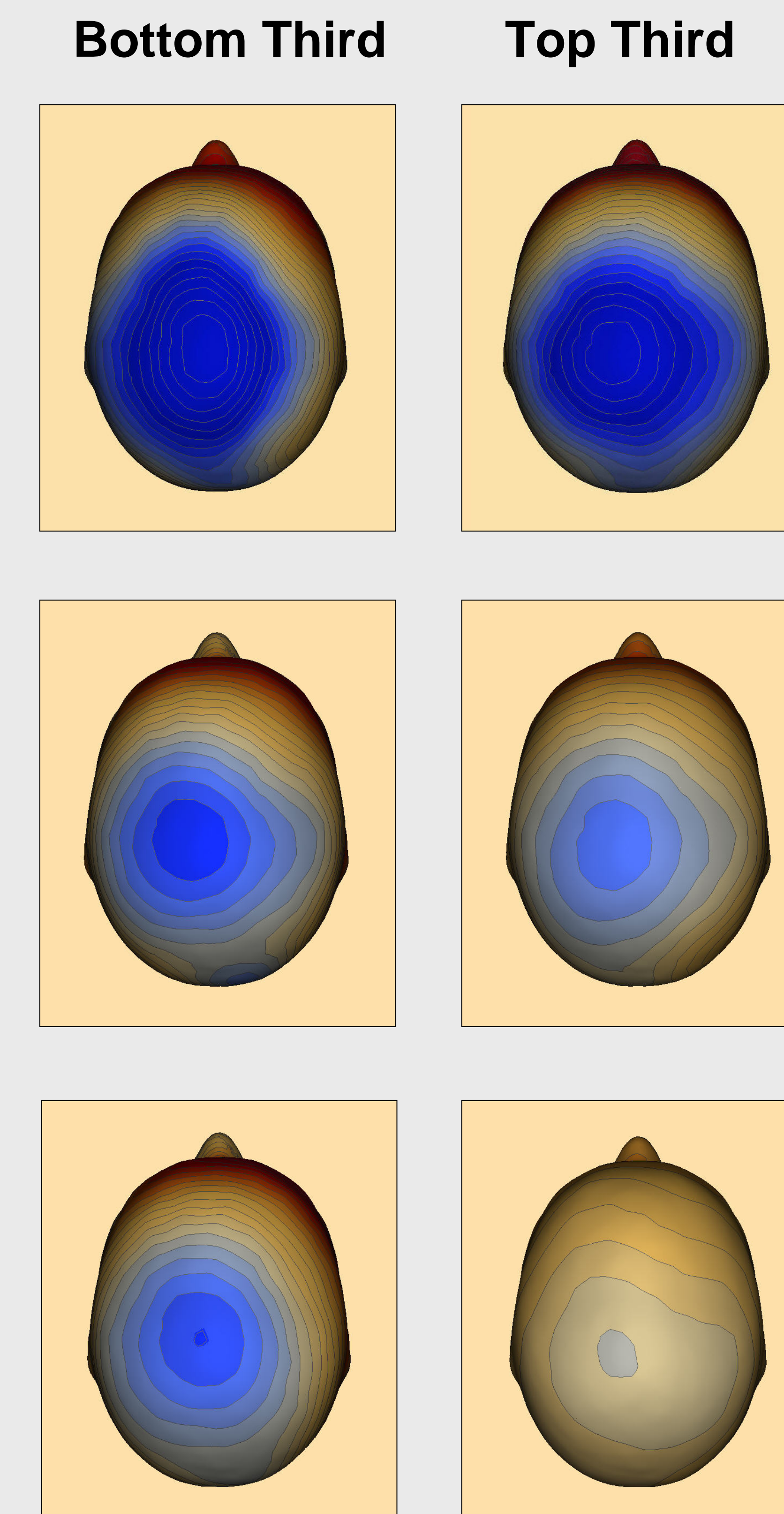
ERN amplitude and SRP-III Score.



Overlaid ERP waveforms for correct and error trials for the top and bottom thirds of SRP-III Total Psychopathy scores.



Topographies for the top and bottom thirds for SRP-III Total Psychopathy scores.



Conclusions

- Psychopathy is more likely to involve performance monitoring deficits when decisions involve emotional information thus replicating our work with violent offenders.¹
- Such results are consistent with the view that psychopathy is associated with limbic/paralimbic dysfunction.^{2,3}
- Emotion-related neural dysfunction is evident at higher levels of this trait even in a typical undergraduate population.
- These data support the view that there is a continuity with respect to underlying neural dimensions of psychopathy that extends to subclinical levels.^{4,5}

References

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Acknowledgements

Funded by the Natural Sciences and Engineering Research Council of Canada. Thanks to Dr. Michael Dixon, Annie Le, James Desjardins and Allison Flynn for their assistance and to participants at the U of Waterloo, ON, Canada.

Presented at the 48th Annual Meeting of the Society for Psychophysiological Research, Austin, TX, October 1-4, 2008.
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