



Investigations into the frequency of 'no-go' cues in a simple go/no-go paradigm

[Link to publication record in Manchester Research Explorer](#)

Citation for published version (APA):

Lythe, KE., Anderson, IM., McKie, S., Richardson, P., Deakin, JFW., & Elliott, R. (2005). *Investigations into the frequency of 'no-go' cues in a simple go/no-go paradigm*. Poster session presented at Human Brain Mapping 2005, Toronto, Ontario, Canada.

Citing this paper

Please note that where the full-text provided on Manchester Research Explorer is the Author Accepted Manuscript or Proof version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version.

General rights

Copyright and moral rights for the publications made accessible in the Research Explorer are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Takedown policy

If you believe that this document breaches copyright please refer to the University of Manchester's Takedown Procedures [<http://man.ac.uk/04Y6Bo>] or contact uml.scholarlycommunications@manchester.ac.uk providing relevant details, so we can investigate your claim.



Investigations into the frequency of 'no-go' cues in a simple go/no-go paradigm

Lythe KE, Anderson IM, McKie S, Richardson P, Deakin JFW and Elliott R

Neuroscience and Psychiatry Unit karen.lythe@student.manchester.ac.uk

Introduction

- Response inhibition is the ability to suppress pre-potent responses which has been associated with impulsivity
- Prefrontal cortex (PFC) regions are activated in response inhibition tasks
- Questions remain as to whether using a high percentage of no-go cues taps into response inhibition or response selection (i.e. examines responding between two equally frequent cues, rather than examines inhibiting pre-potent responses)

Aims and Hypotheses

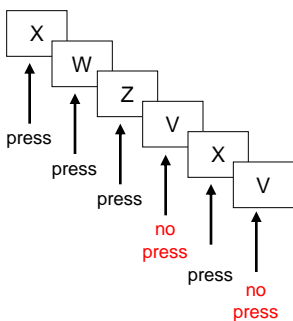
- Using fMRI we investigated the effects of frequency of the no-go cues
- We hypothesised there would be no difference in PFC activation

Method

- 18 participants (8 female, 10 male) completed a go/no-go paradigm in a 1.5T scanner
- 108 volumes were acquired with T2*-weighted, gradient echo, EPI
- Each volume was 40 slices with a slice thickness of 3.5mm

Task

- Participants were presented with a series of letters to which they were instructed to respond ('go') or not respond ('no-go')
- All letters were 'go' cues apart from the letter V
- Stimuli appeared every 1.7 seconds in 45 second blocks



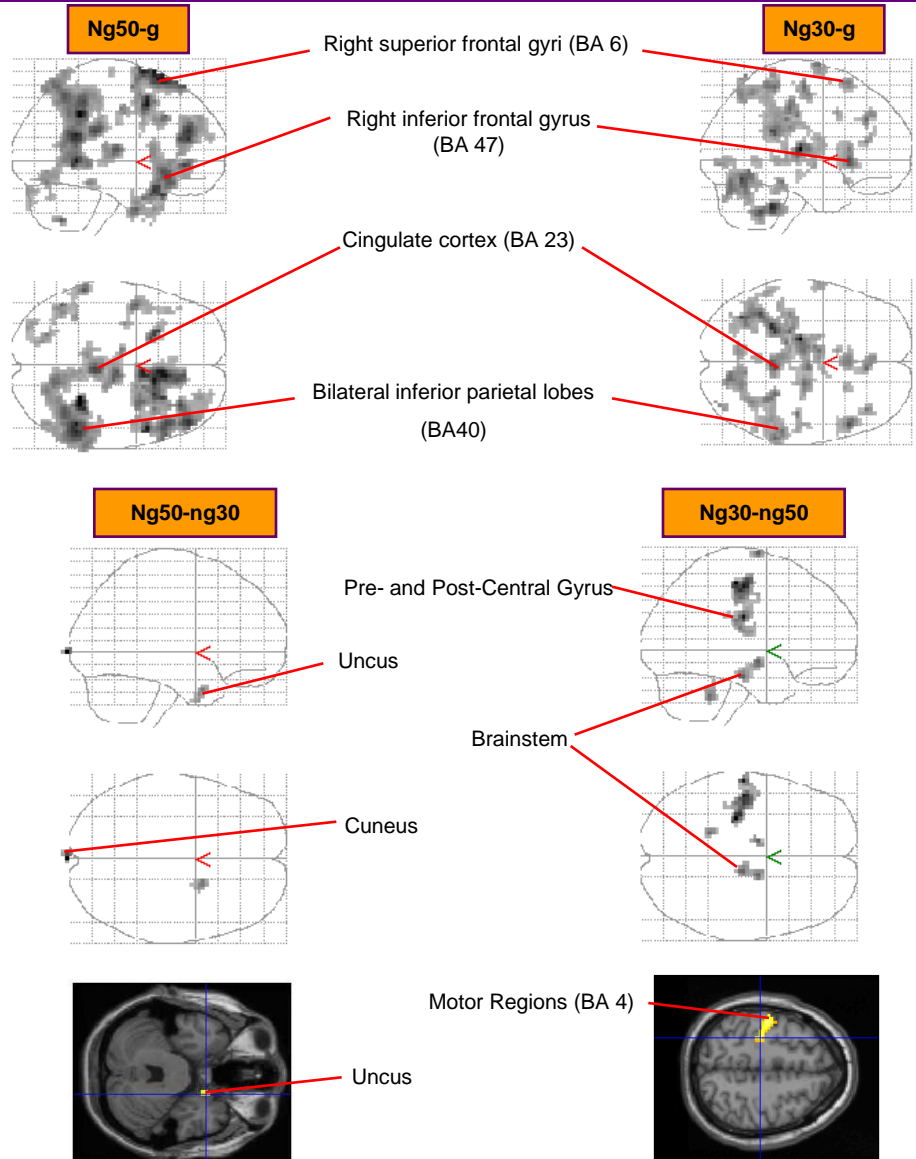
- The task was an ABAC blocked design, repeated 3 times

- A – 100% go
- B – 50% no-go
- C – 30% no-go

Analysis

- Data were analysed using SPM2 with a random effects model

Results



Conclusions

- Significant BOLD responses during both ng50-g and ng30-g conditions were observed in predominantly right prefrontal cortex regions, confirming previous findings
- No additional BOLD responses were observed in prefrontal cortex regions in either the ng50-ng30 or ng30-ng50 contrasts, suggesting that paradigms with 50% no-go cues are response inhibition tasks rather than response selection
- Significant BOLD responses in the ng30 contrast compared to the ng50 condition (ng30-ng50) were observed in motor regions, presumably related to increased motor demands of responding 70% (ng30) rather than 50% (ng50) of the time

Acknowledgements

- Many thanks to the staff at the Translational Imaging Unit and to the participants in the study
- This research is supported by the Medical Research Council and contributes to the NEWMOOD EU Integrated Programme LSHM-CT-2004-503474.