

Neuronal

coherence



Pascal Fries

in man and monkey

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Acknowledgements

Multi-site recordings in anesthetized cats

Wolf Singer
Andreas Engel
Sergio Neuenschwander
Rainer Goebel

MEG experiments in human subjects

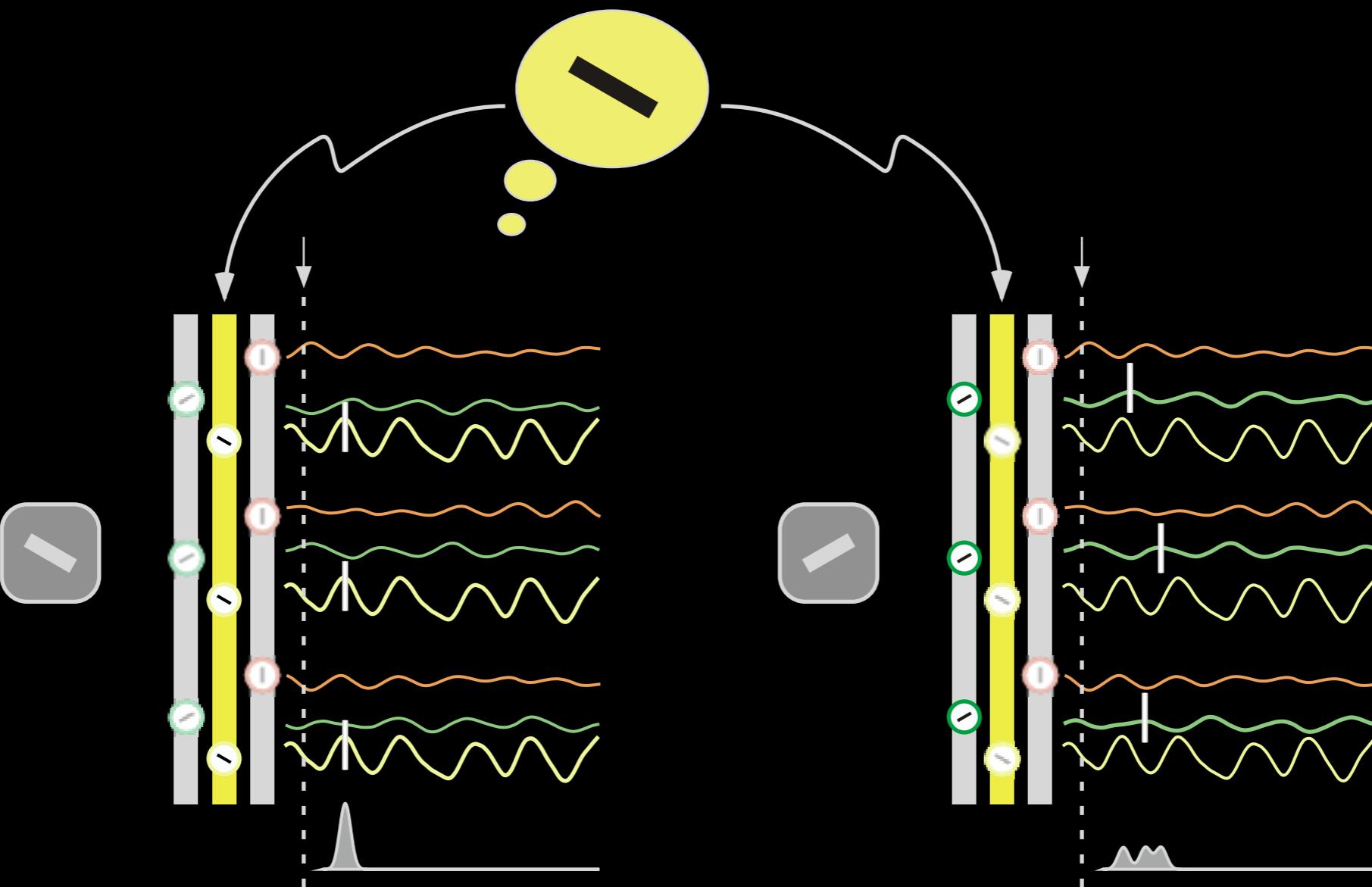
Jan Mathijs Schoffelen
Nienke Hoogenboom
Robert Oostenveld

Multi-site recordings in monkeys

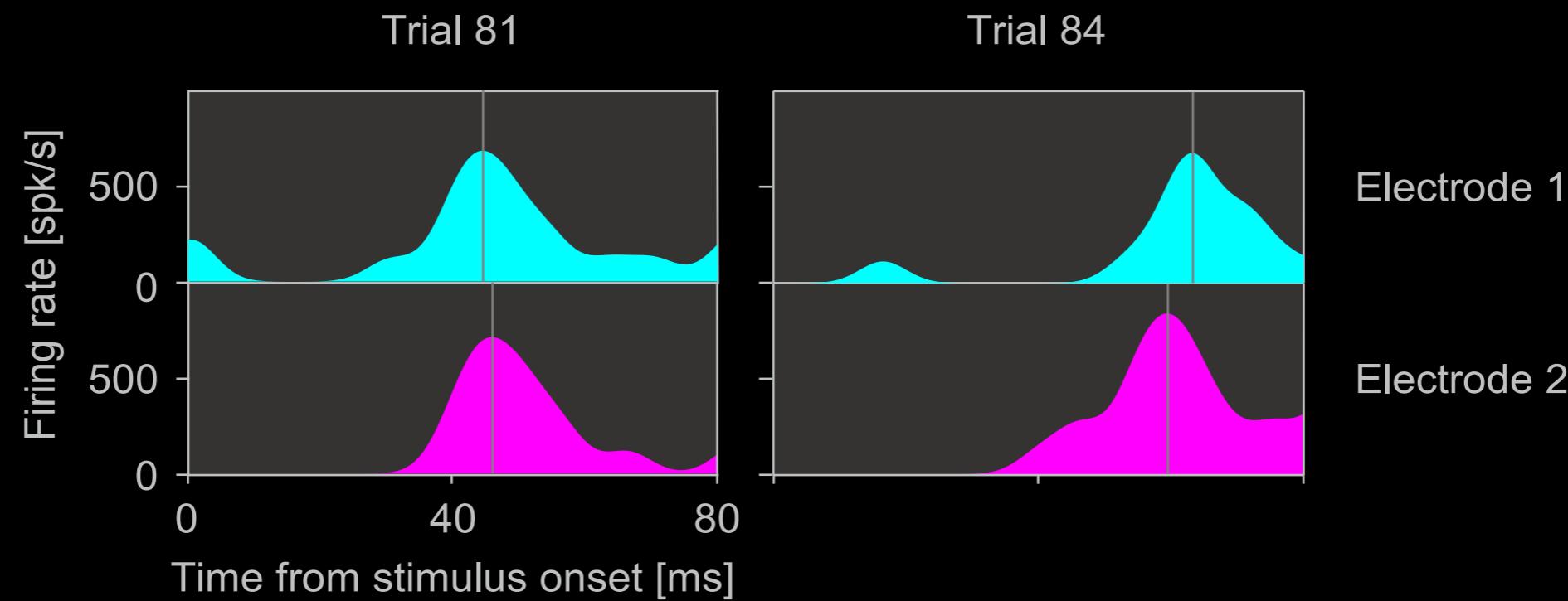
Bob Desimone
John Reynolds
Beth Buffalo
Alan Rorie

Data analysis

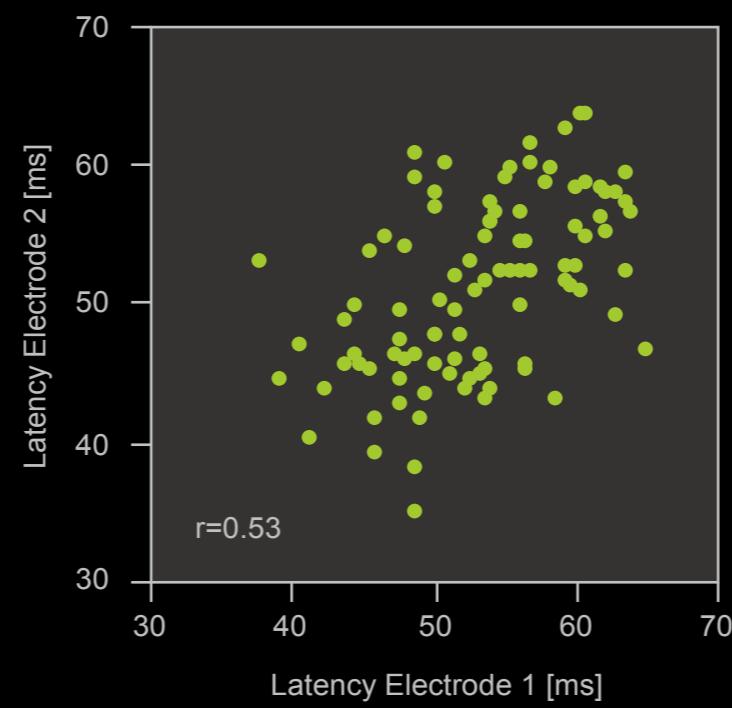
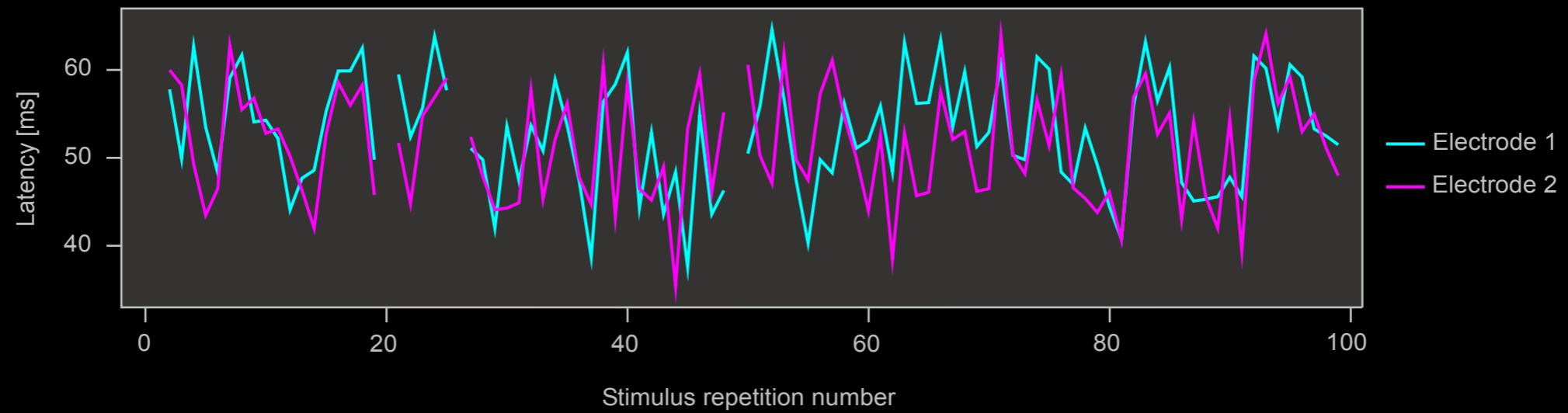
Partha Mitra
Hualou Liang
Steve Bressler
Joachim Gross



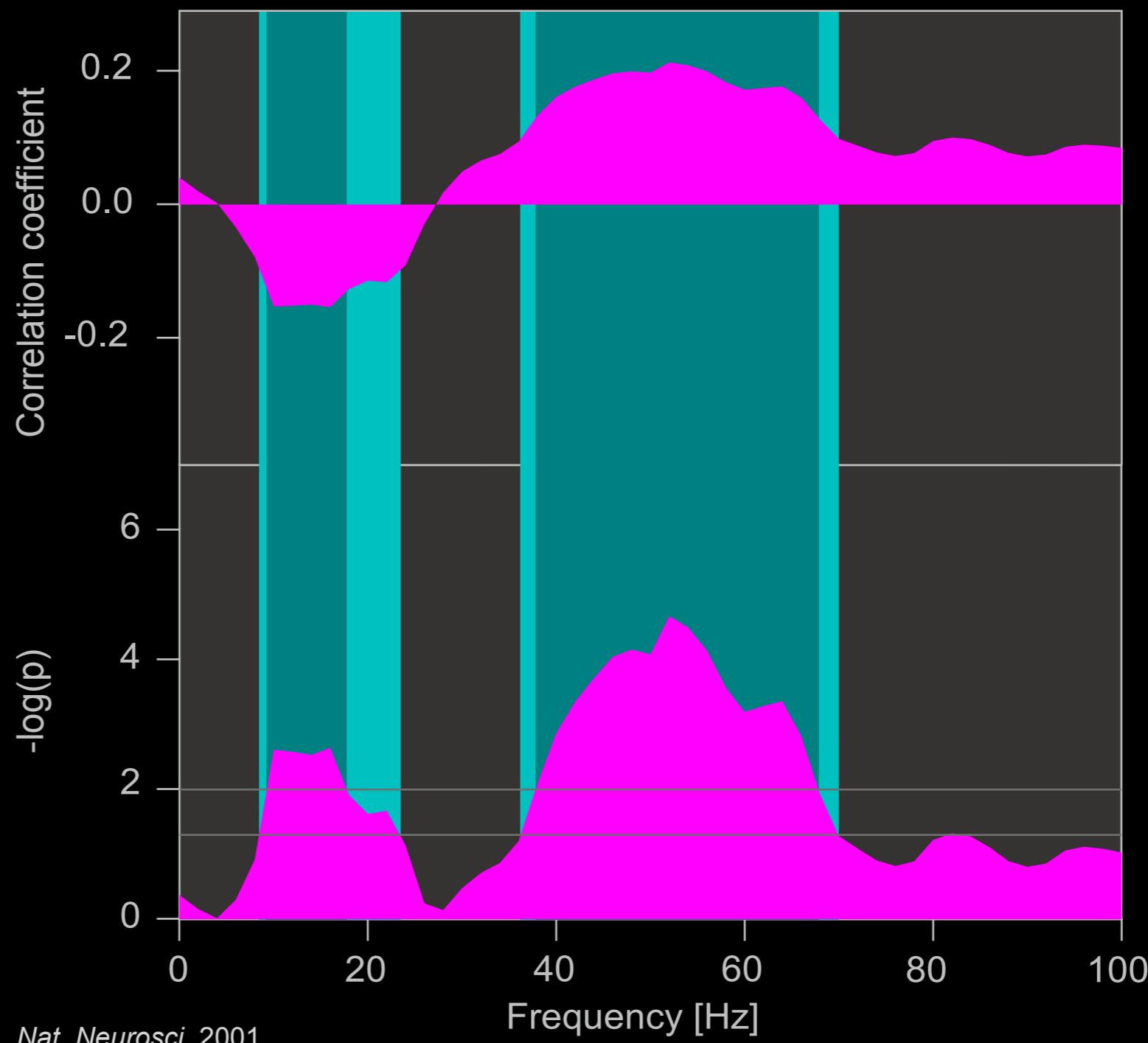
Engel et al., *Nat. Rev. Neurosci.*, 2001



Fries et al. *Nat. Neurosci.* 2001

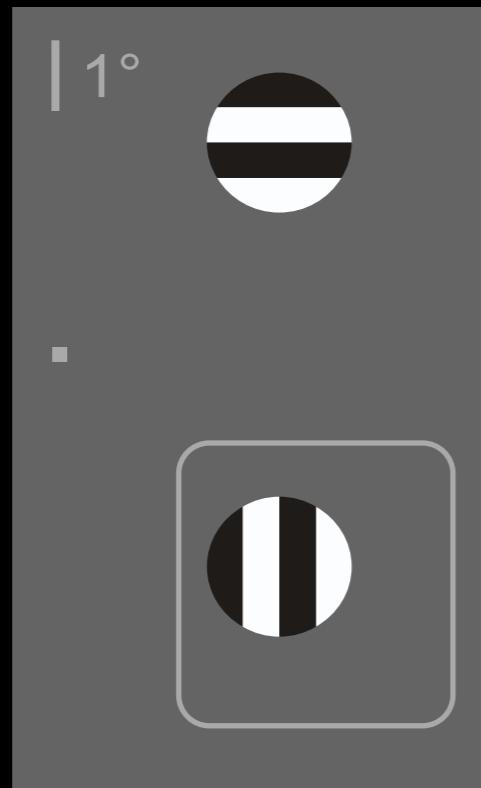


Fries et al. *Nat. Neurosci.* 2001

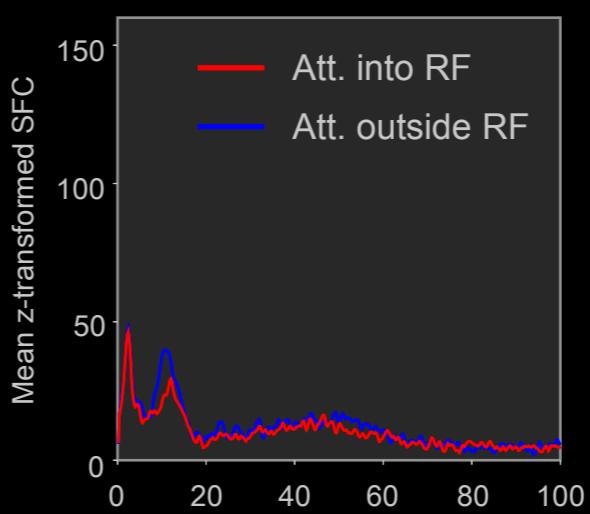


Fries et al. *Nat. Neurosci.* 2001

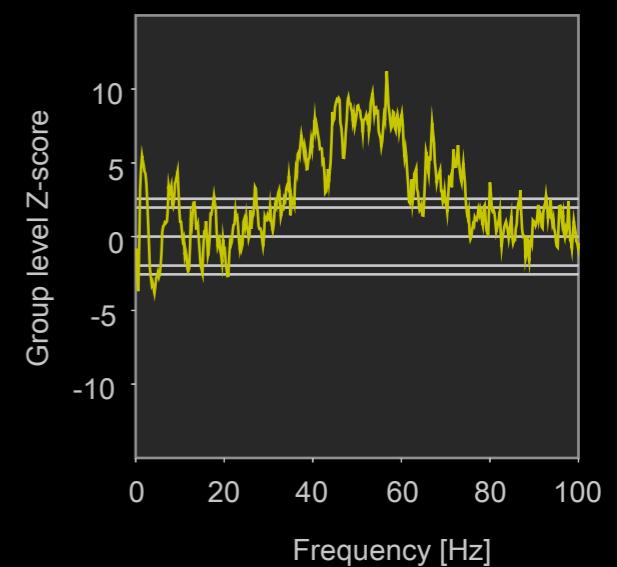
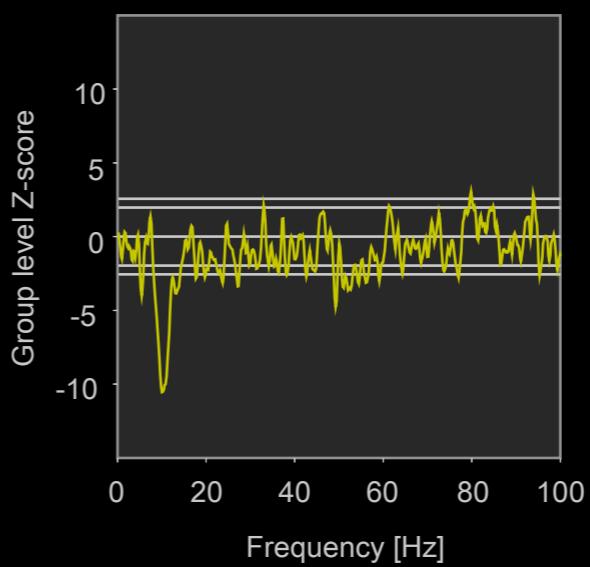
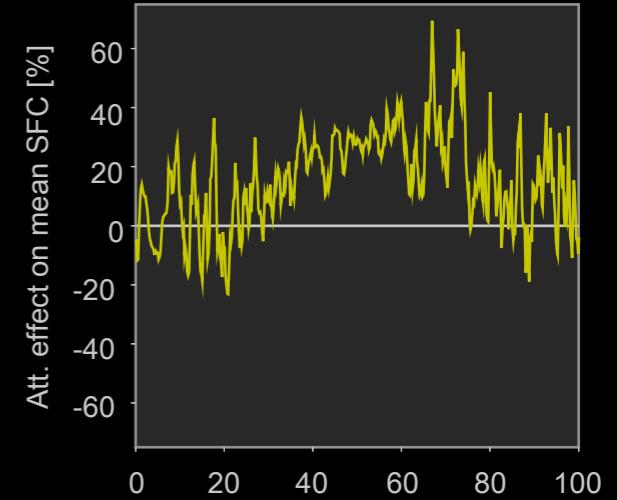
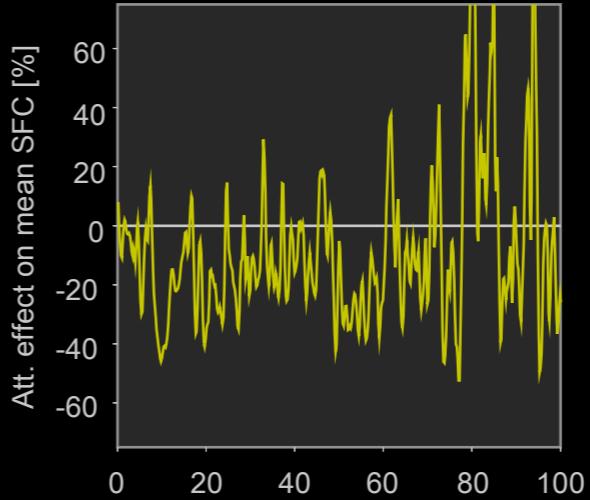
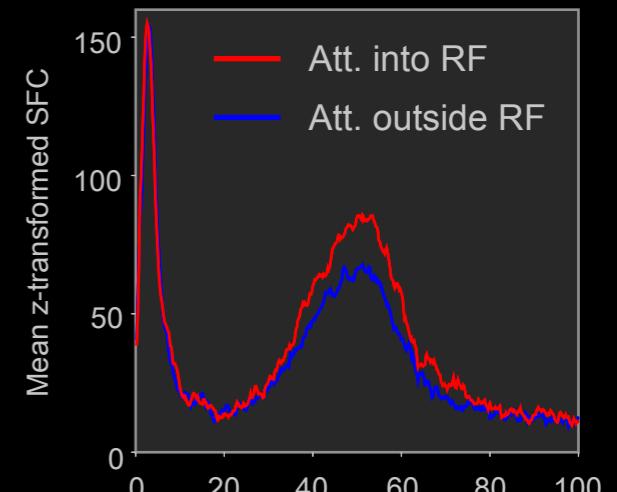
Selective visual attention reduces spontaneous alpha- and enhances stimulus induced gamma-band synchronization in monkey area V4



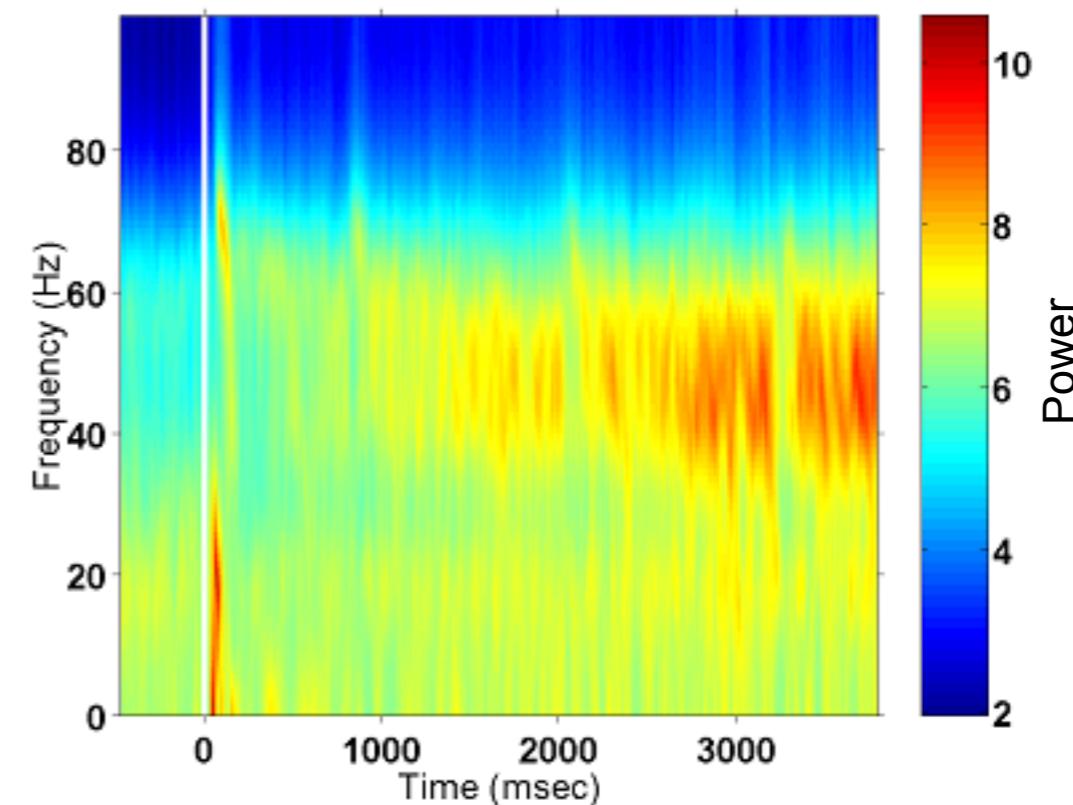
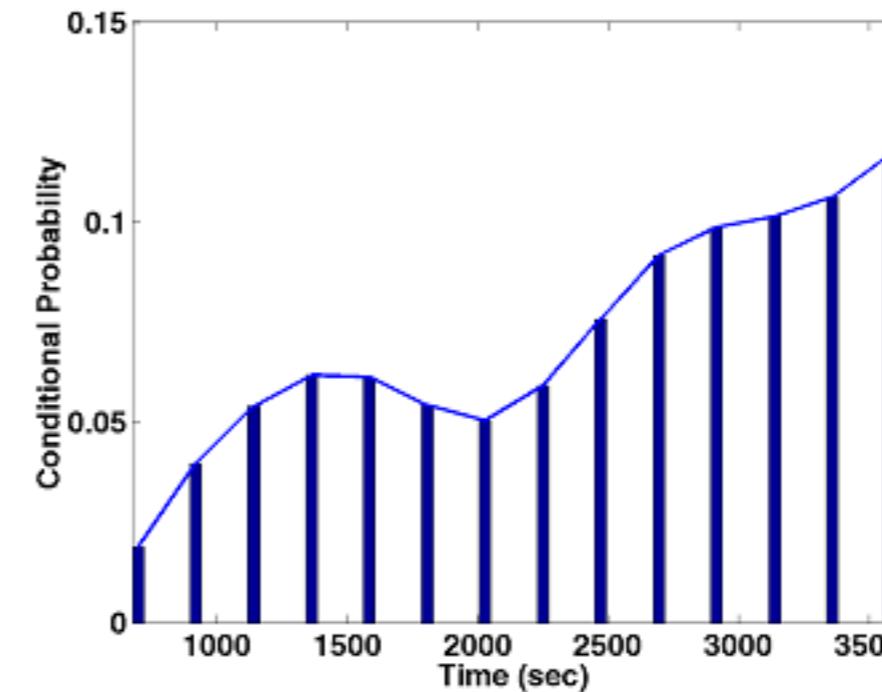
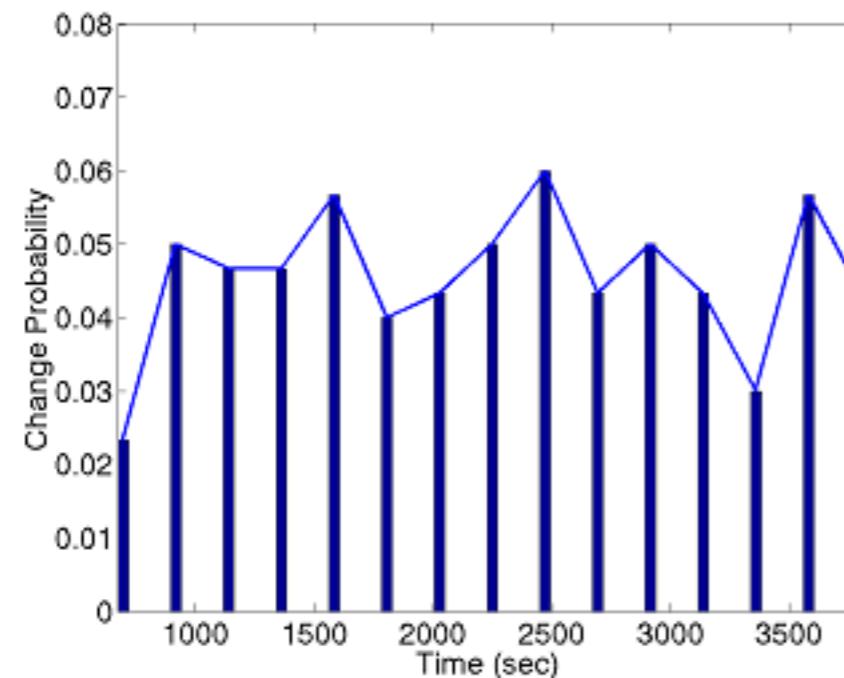
Pre-stim. N=207



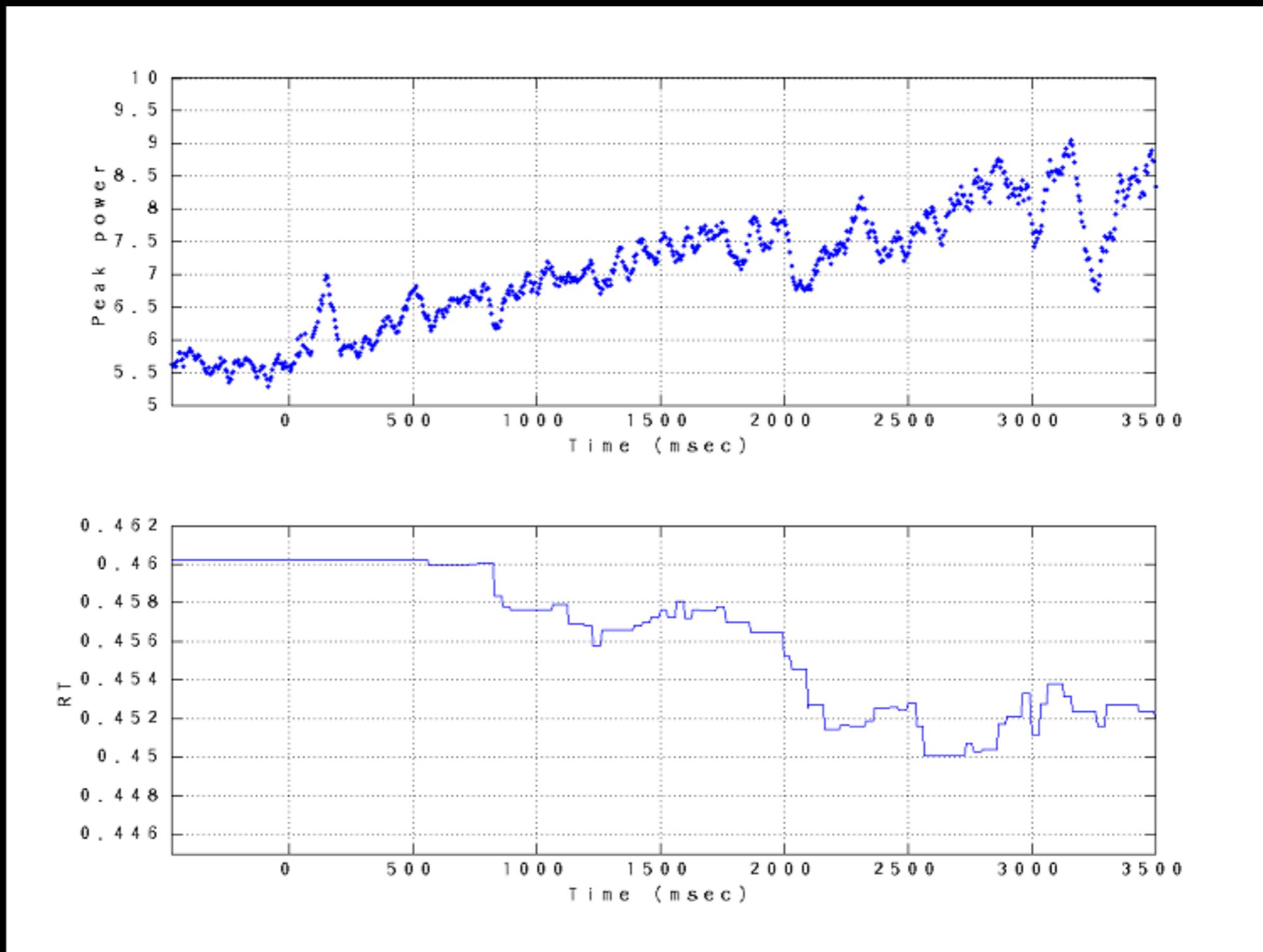
Post-stim. N=207



Instantaneous probability determines monkey V4 gamma activity.

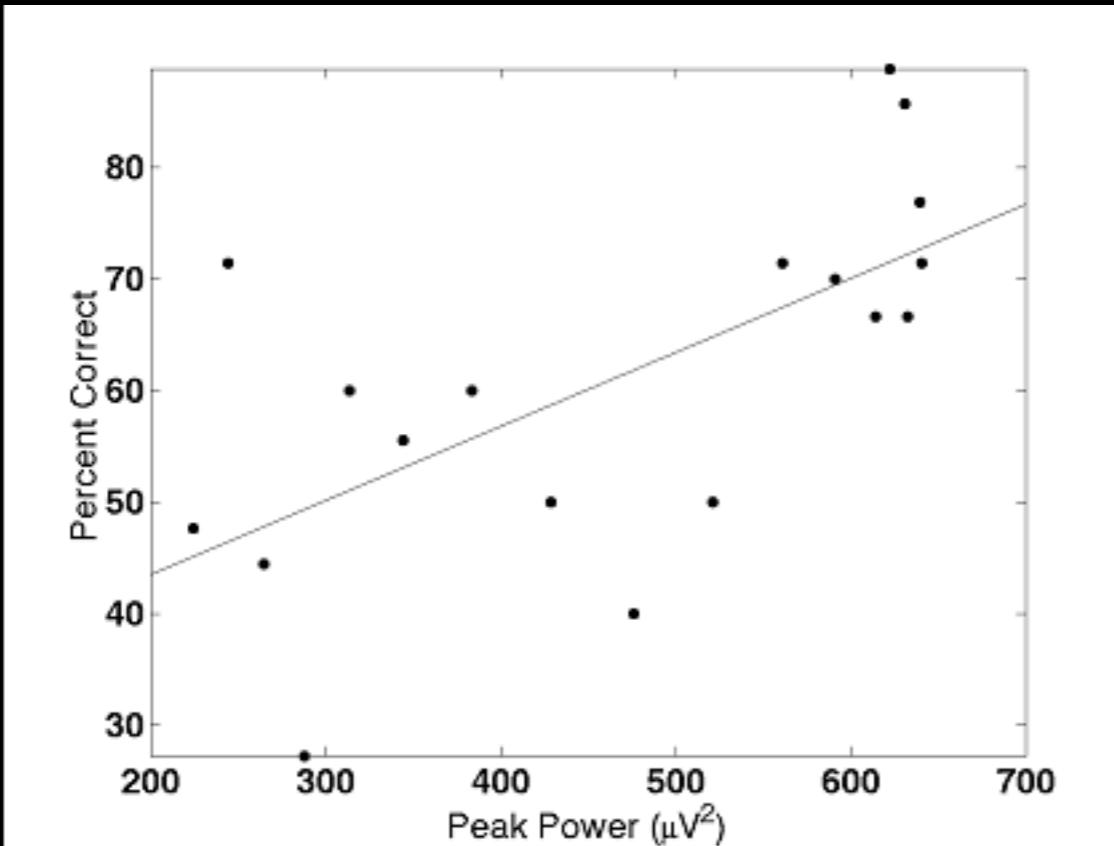


Monkey V4 gamma activity predicts reaction times.

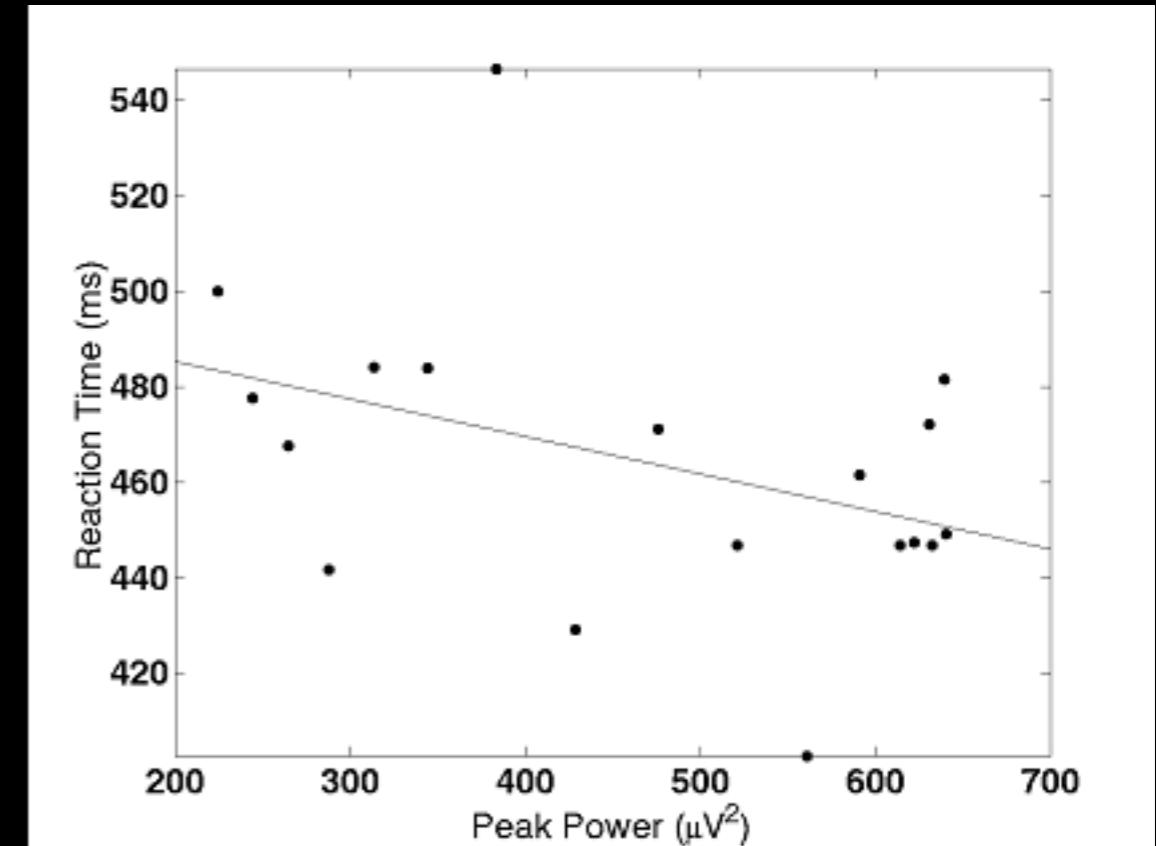


Monkey V4 gamma activity predicts reaction times and performance.

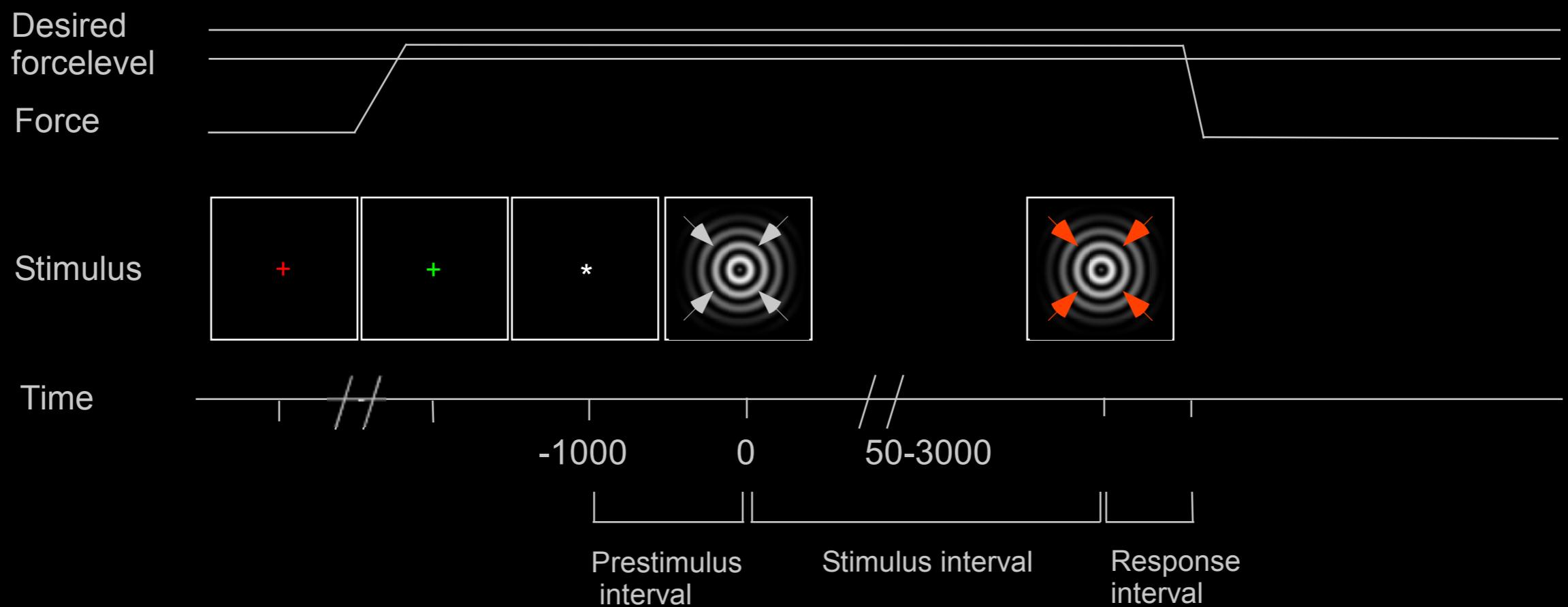
$r = 0.65$ ($p < 0.01$)



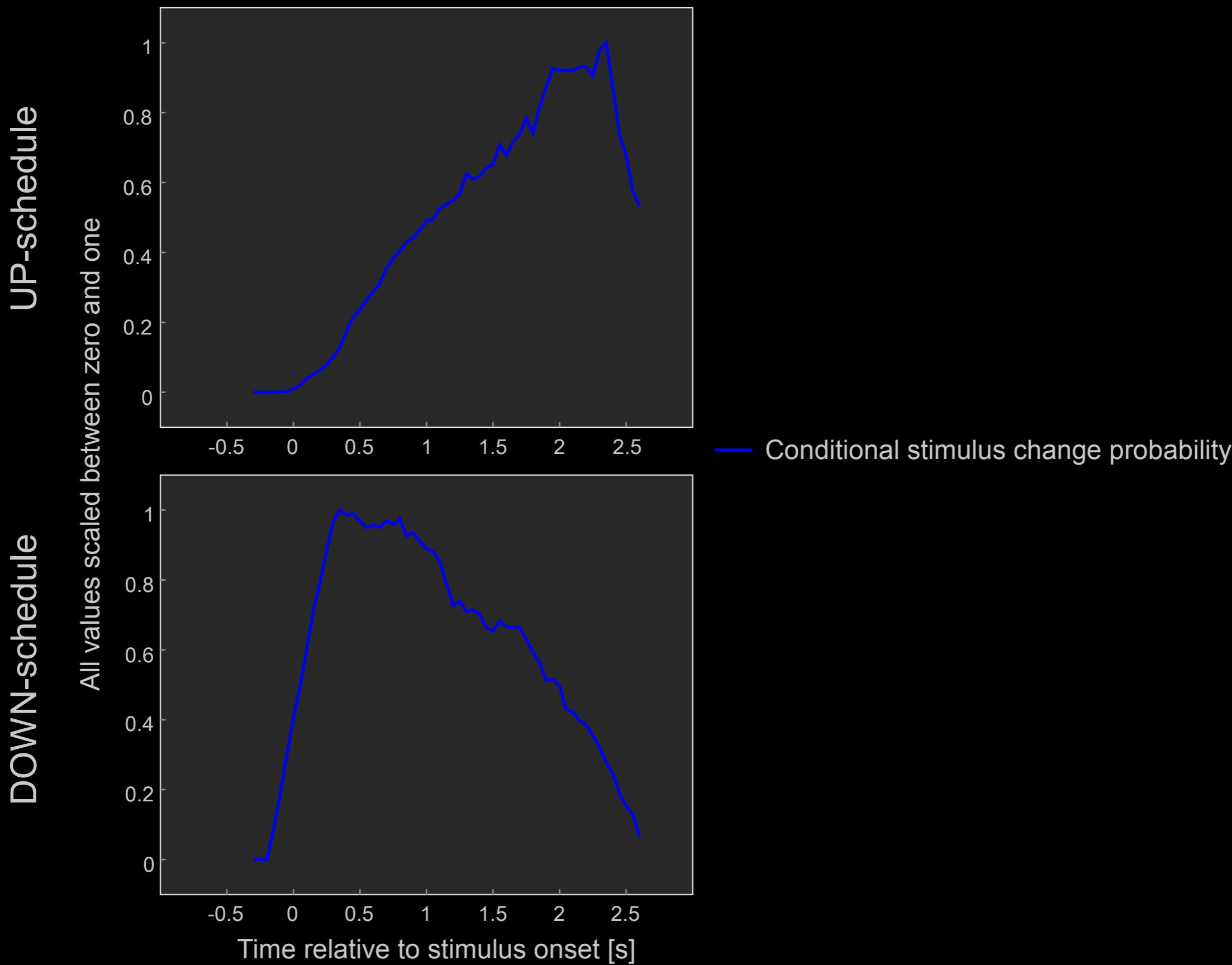
$r = -0.4$ ($p < 0.05$)



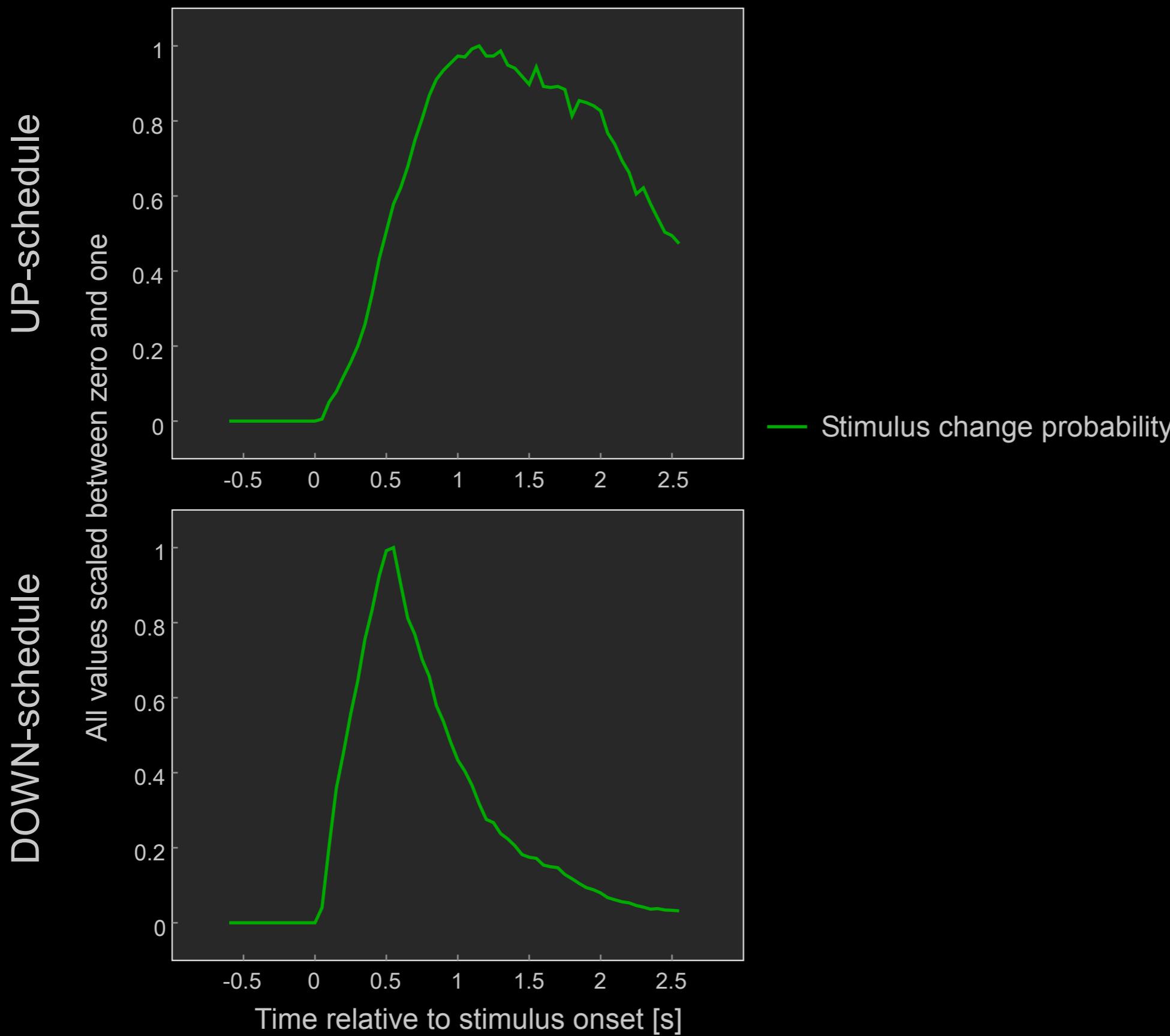
The MEG/EMG paradigm



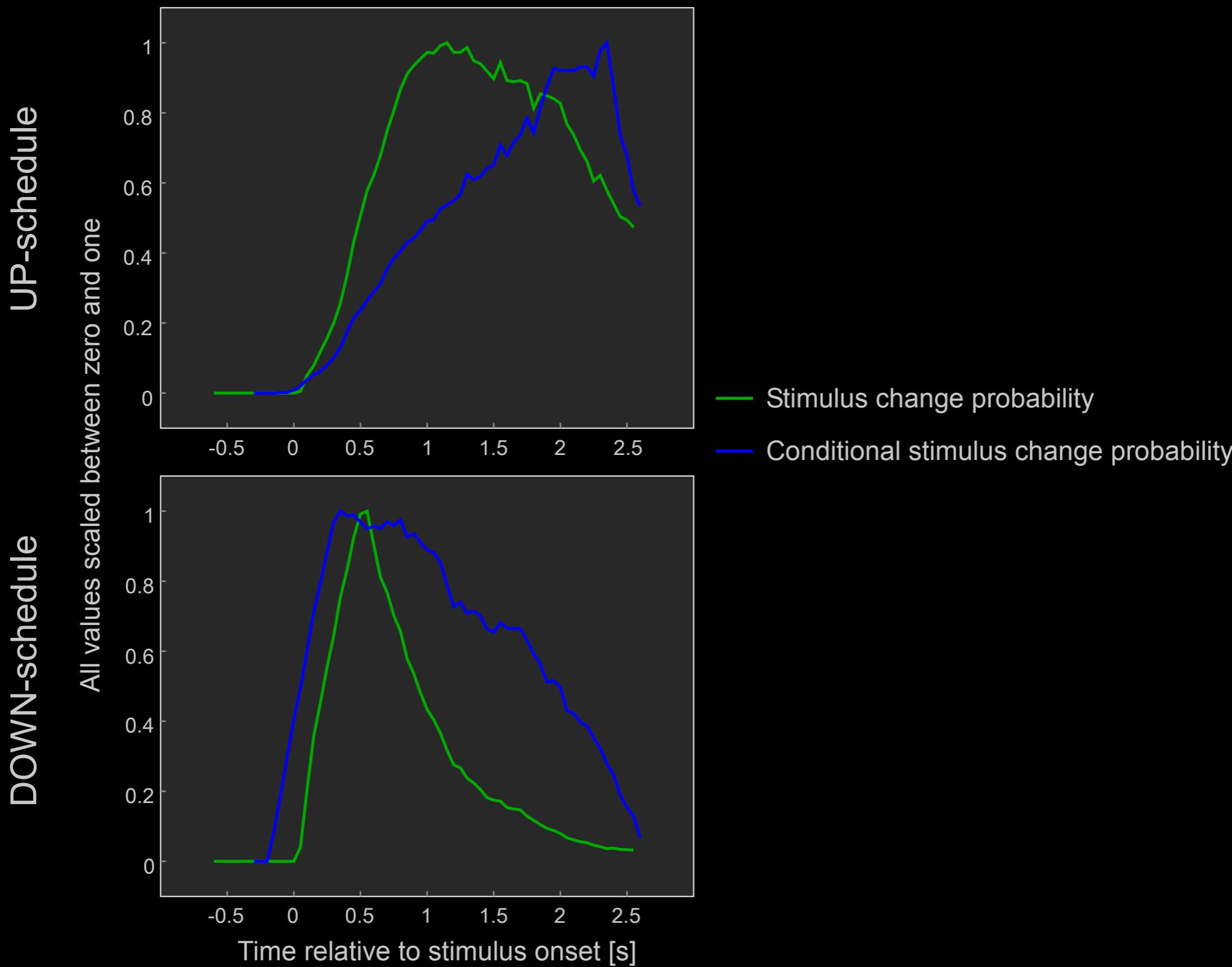
The temporal evolution of instantaneous probability used



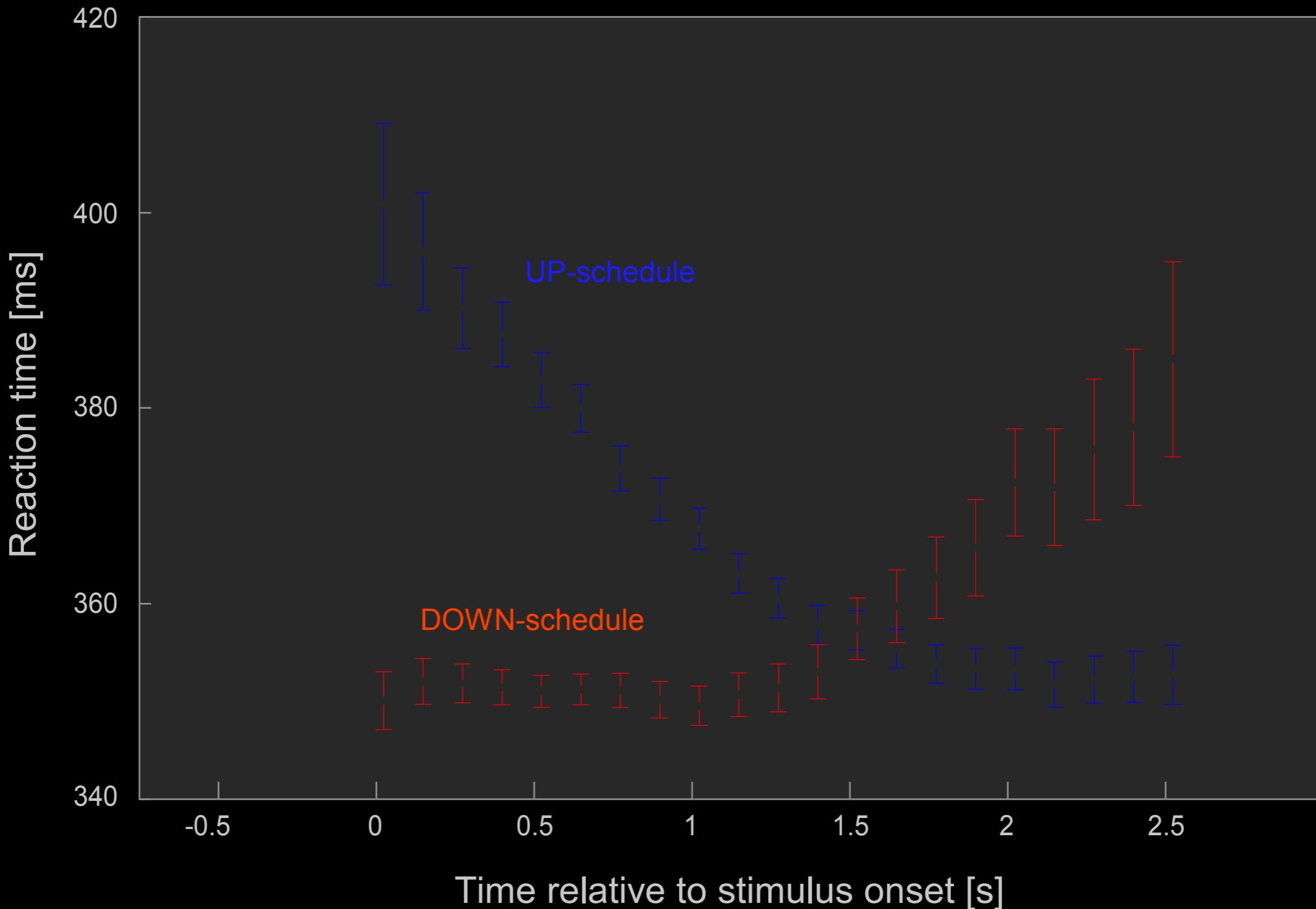
The temporal evolution of probability (across trials) used



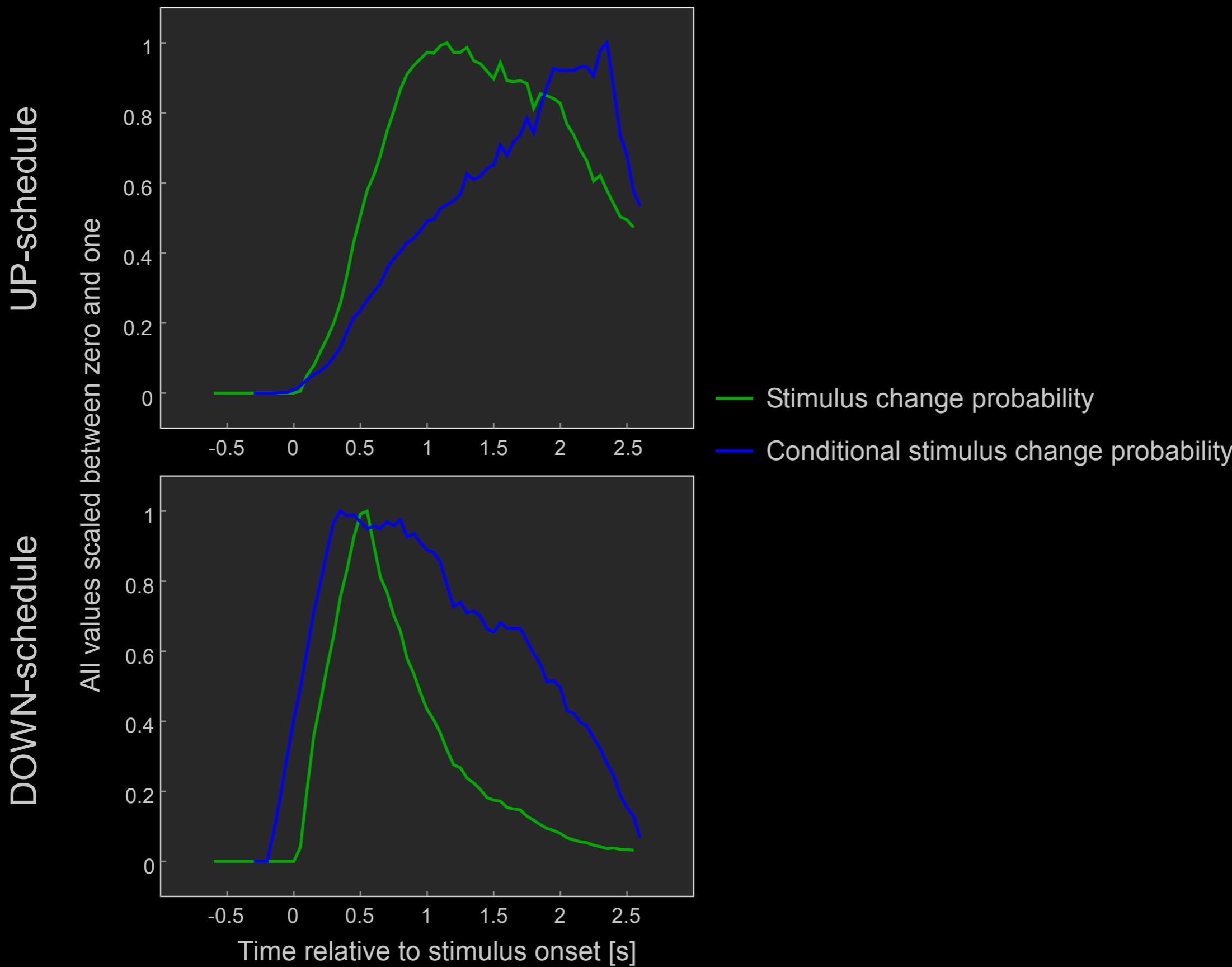
Instantaneous probability determines reaction times.



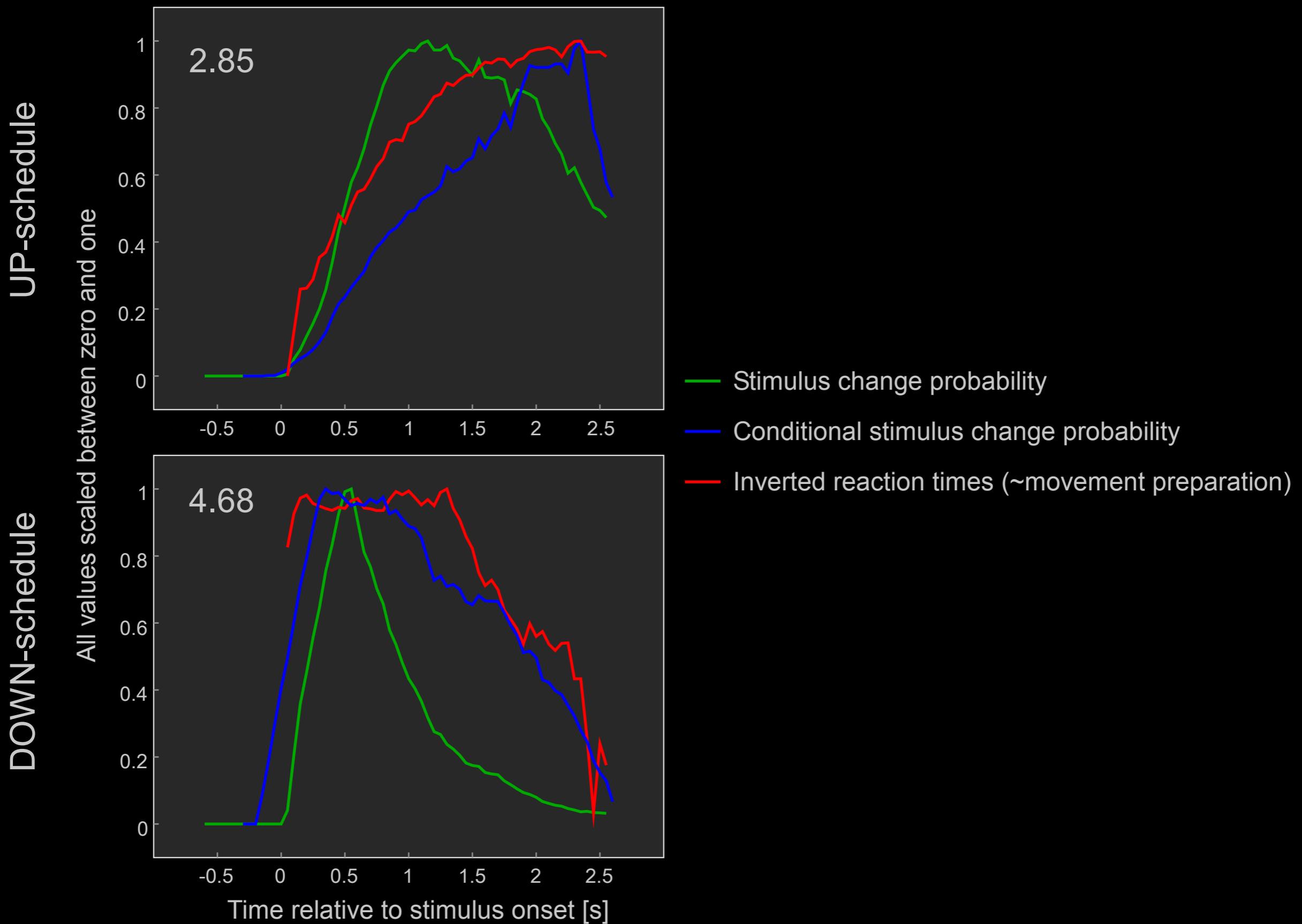
Instantaneous probability determines reaction times.



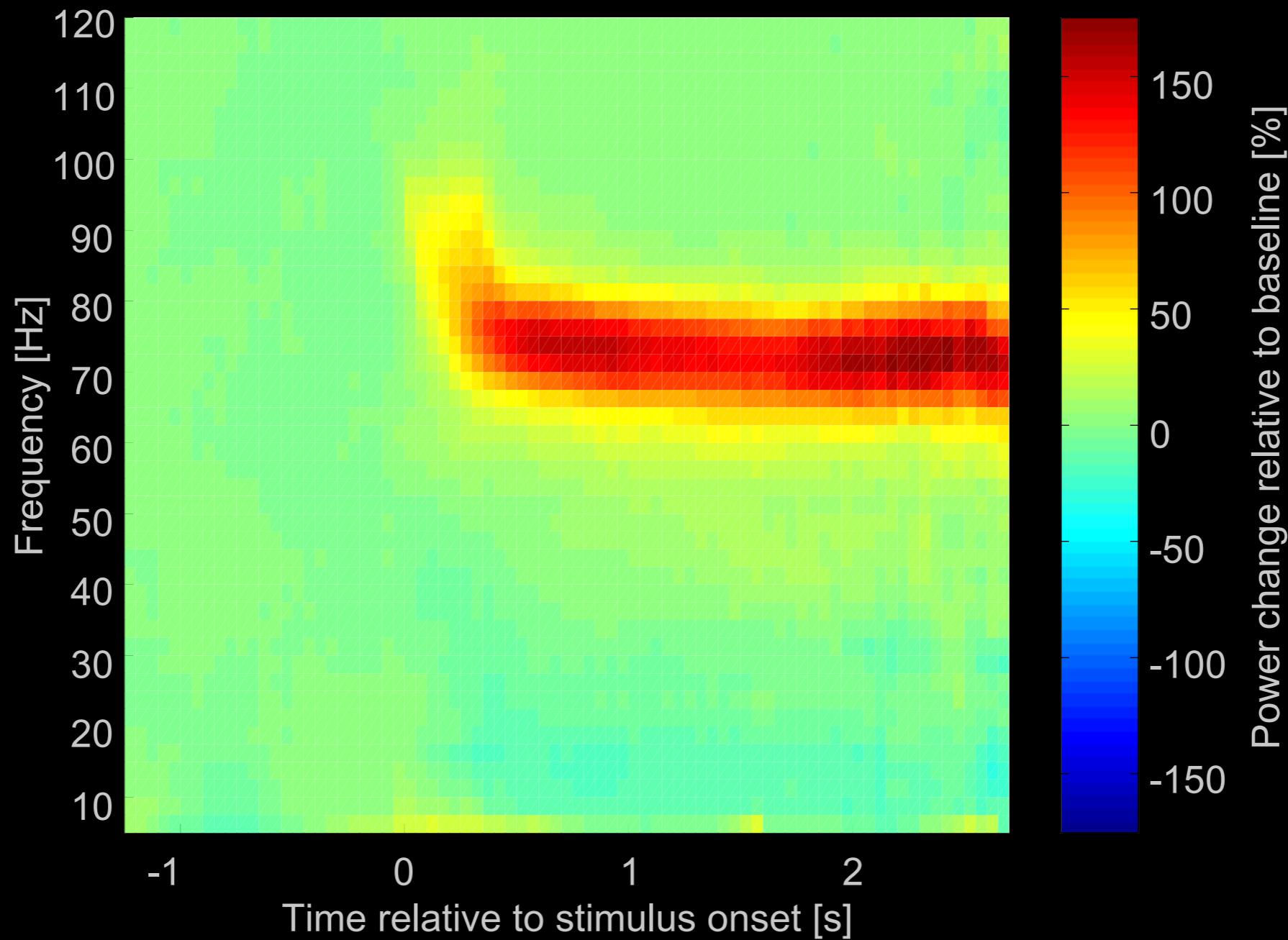
Instantaneous probability determines reaction times.



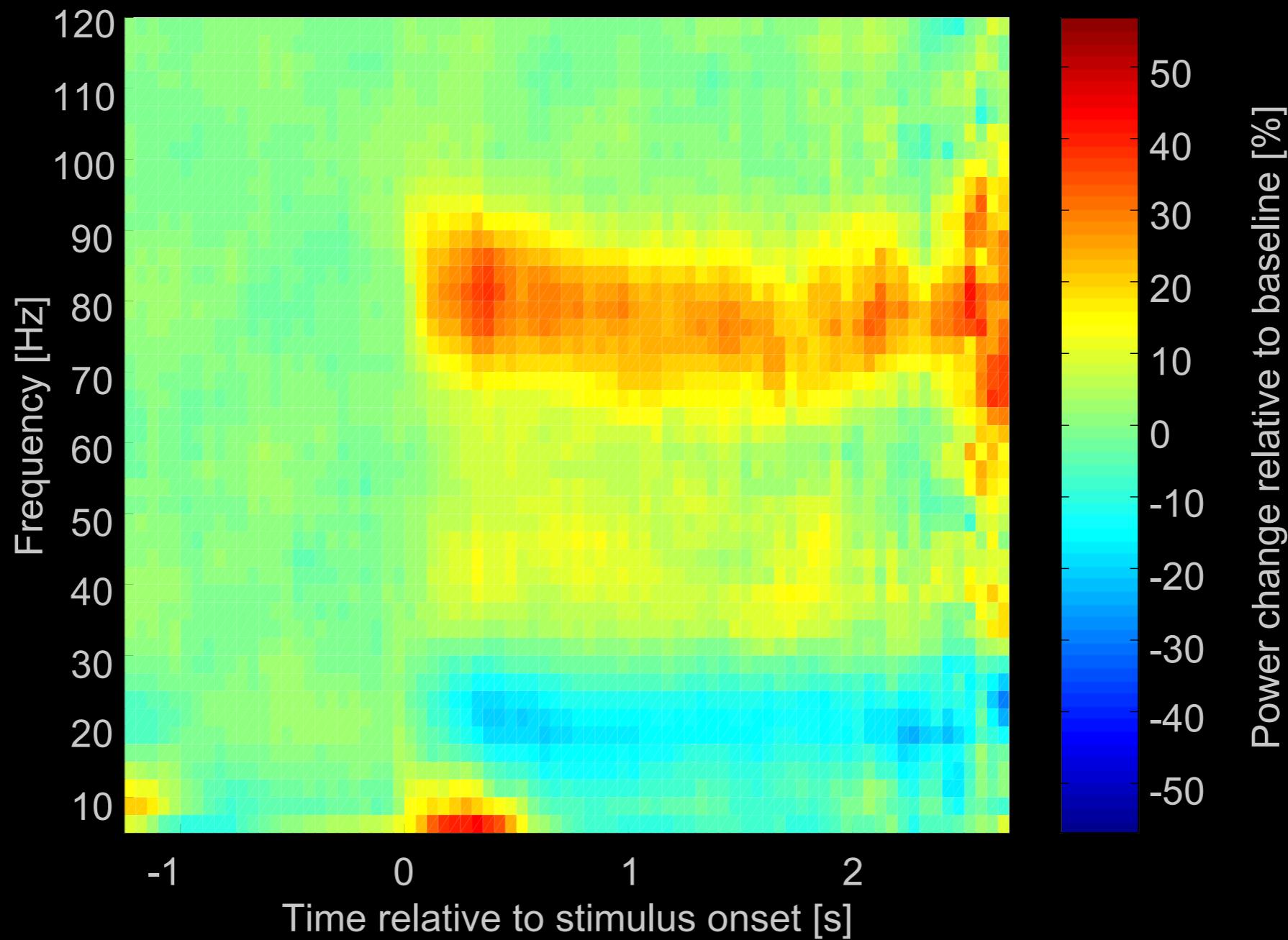
Instantaneous probability determines reaction times.



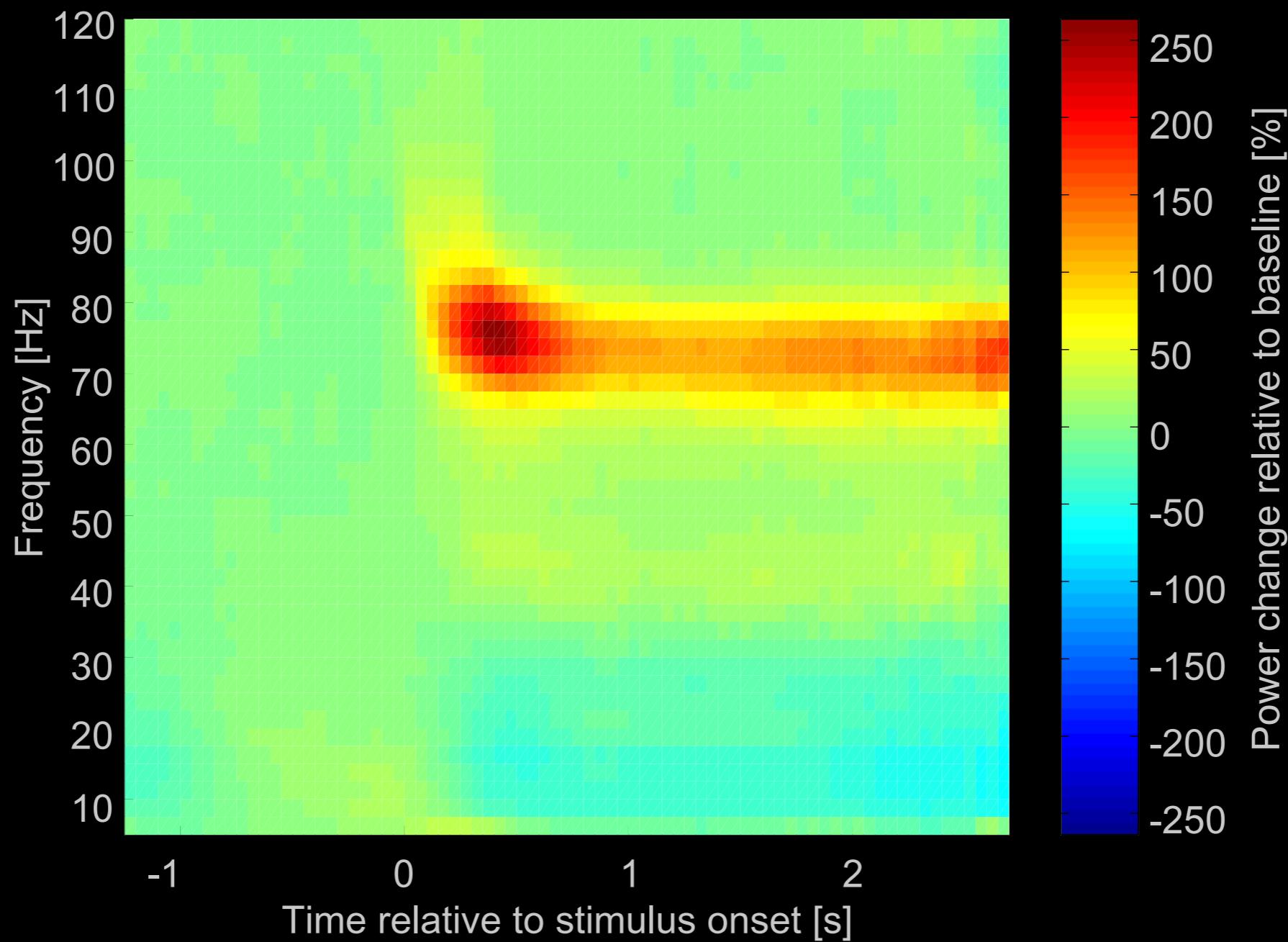
Instantaneous probability does not determine human visual cortical gamma activity
- subject 1.



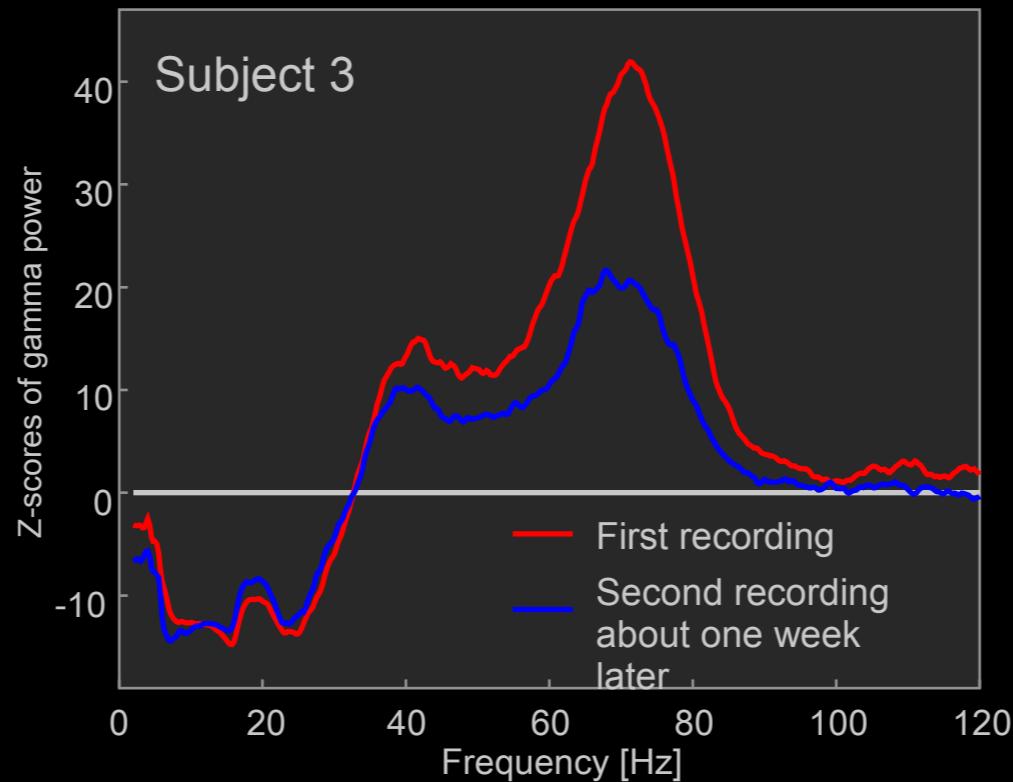
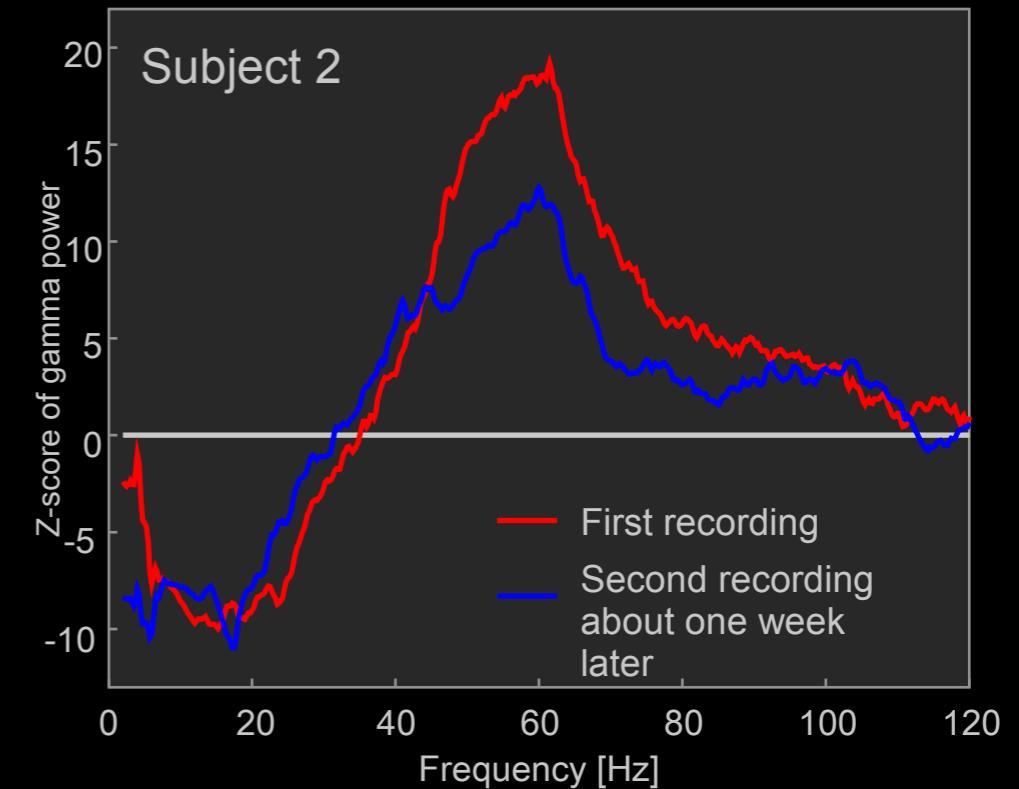
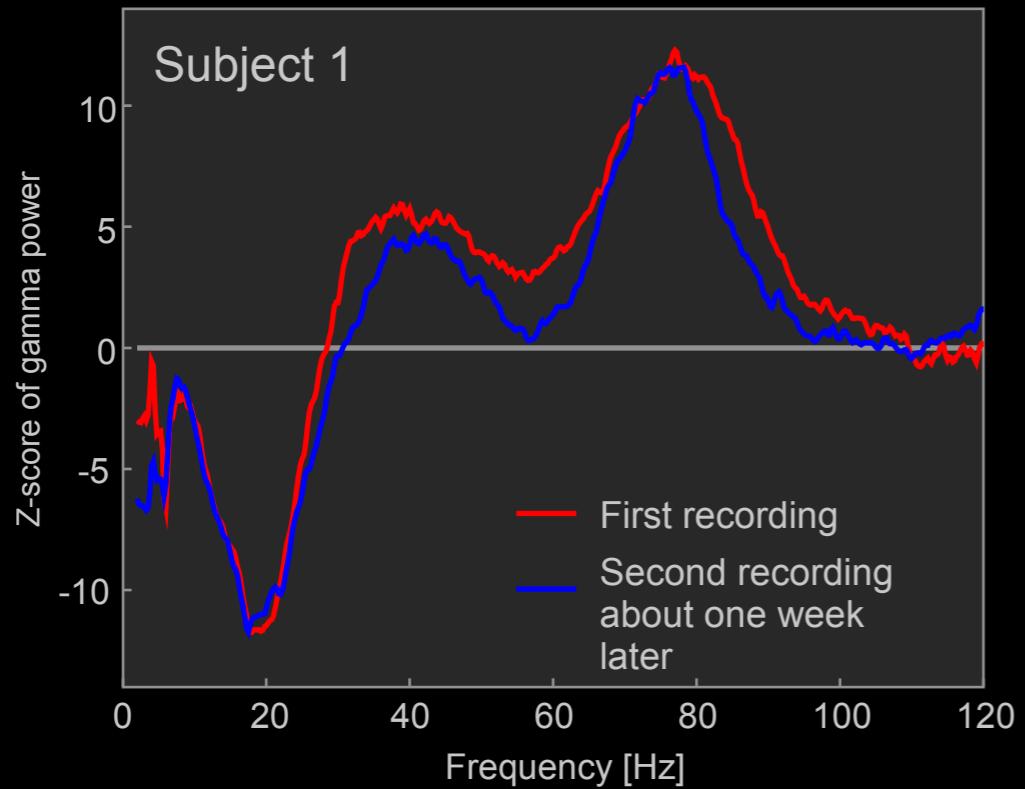
Instantaneous probability does not determine human visual cortical gamma activity
- subject 2.



Instantaneous probability does not determine human visual cortical gamma activity
- subject 3.



The spectral signature of visual processing



The human visual gamma network - imaged.

