

Continuous behavioural and lateralised EEG correlates of underlying neural dynamics in binocular rivalry

Bryan Paton

School of Philosophy & Bioethics; School of Psychology, Psychiatry
and Psychological Medicine, Monash University

Research Interests: Perception of time, multi-modal perception
and conscious perception

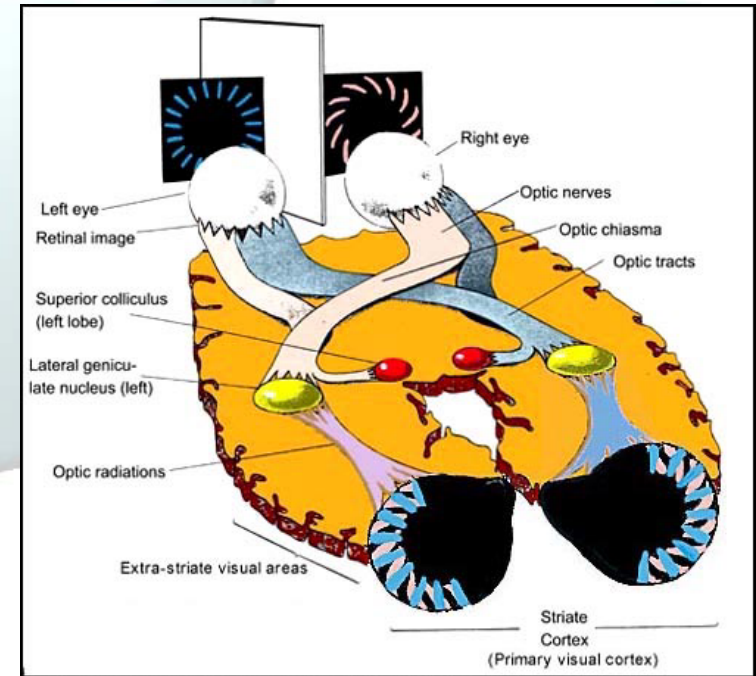


HCSNet

The ARC Network in Human Communication Science

Binocular Rivalry

- Rivalry occurs when different stimuli are presented to each eye
- Alternation between percepts
- Pattern of alternation tells us something about the underlying dynamics, transition periods
- Dynamics of the neural processes and conscious experience
- Top down and bottom up driven

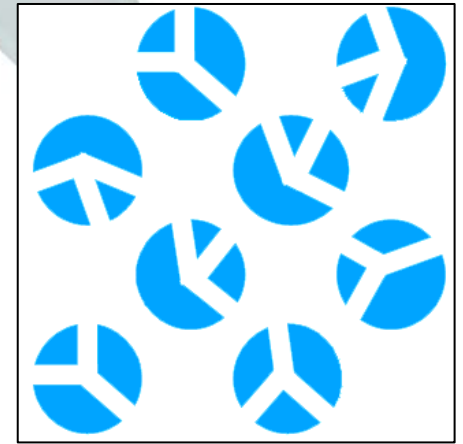
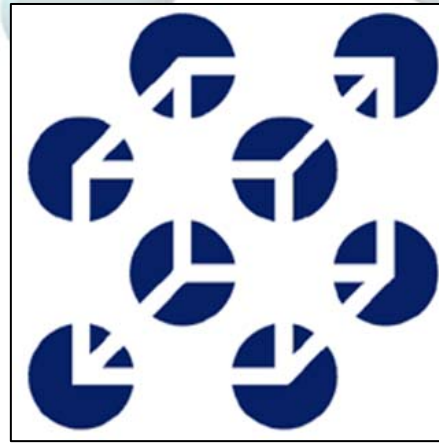
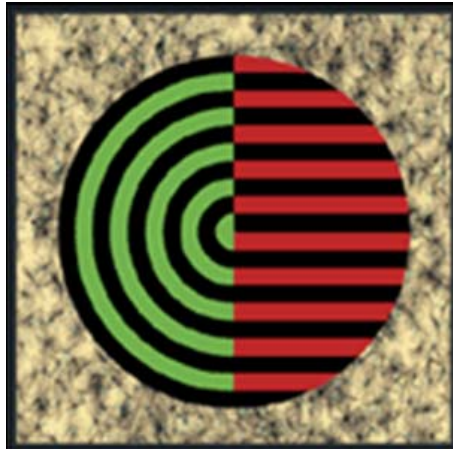
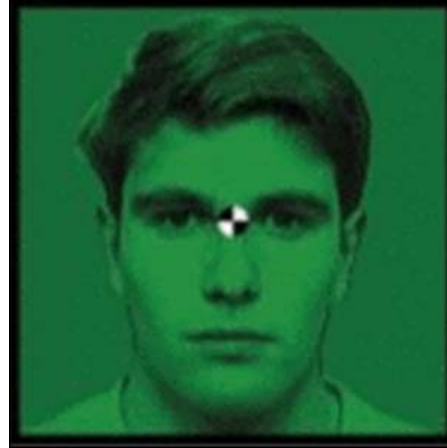


Method

- Use a continuous rather than categorical response device
- Ss can indicate the relative amount of each of the stimuli in a given percept
- Use simple through to complex stimuli
- Record EEG (64 Ch Synamps2) at the same time
- Interested in attractor landscape, onset times, dominance periods, transition times



Stimuli



Implications, Future Work

- A “more” continuous measure may reveal more of the dynamics, specifically transitions
- Correlating behavioural measures (conscious experience) with EEG, latencies, differences?
- Comparison of categorical vs. continuous responses
- Lateralisation effects, stimulus effects?
- Future: simultaneous EEG and fMRI

