Plans for action in primary motor cortex revealed using transcranial magnetic stimulation

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Background

How are rapid perceptuomotor decisions generated in the brain?

- Serial approaches
  - Perceive > Decide > Plan > Act
- Parallel approaches
  - Perception drives preparation...automatically?
  - Multiple plans...compete?
  - Biasing signals help determine a winner?

Methods

- TMS elicits motor evoked potentials (MEPs)
- Size of MEP reflects levels of activation in cortex
  - A sensitive index of motor planning for actions involving a specific muscle
  - Recording from two muscles permits assessment of parallel intra-hemispheric action planning

Results & Discussion