Knowing You Know Before You Know: EEG Correlates of Initial Feeling-of-Knowing
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What does it mean to “know you know before you know”?

- Tip-of-the-Tongue (James, 1890) => strong sense that answer is in memory although cannot retrieve it
- Feeling-of-Knowing (Hart, 1965) => accurately estimate whether answer is in memory when unavailable
- “Game-show” experiments (Reder, 1987; Reder & Ritter, 1992) => FOK occurs before search for answer
  – May influence QA strategy choice

Current Study
- Used Reder & Ritter paradigm with EEG
  - 32 cortical sites using a Neuroscan ® SynAmps²
  - Recordings were made at a rate of 10kHz and with a band-pass filter of 0.1 to 100 Hz
  - Trials segmented from -100 and 1000 ms, baseline-corrected over pre-stimulus interval, and averaged for each condition
- Can we find EEG correlates of feeling-of-knowing?
- How fast does the brain register indices of FOK?
- Where will these FOK components appear on the scalp?

Conclusions
- FOK correlates emerge far earlier than expected - 200 ms after problem presented!
- P200 normally associated with perceptual processing - possible role for “perceptual fluency” in FOK
- Frontal lobes involved - suggests FOK uses similar networks as other metamemory processes

References and Acknowledgements

Subjects can make retrieve / calculate decision accurately in under 850 ms (d’ = 2.04)
Selection of retrieval increases with problem familiarity


d’ was determined as follows: Correct on-time retrievals were treated as hits. Trials for which retrieve was chosen on-time but then an incorrect answer was given (either on-time or late) were treated as false alarms.