Spectral Eeg Features Track Unitary Recognition Memory Signal

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Presentation Abstract Summary A repeated encounter with a person or object frequently elicits feelings of familiarity and recollections of previous interactions. The question of whether these constitute independent signals for recognition has been an issue of contention for decades. Using statistical classifiers trained on spectral EEG features, we quantified neural evidence for recognition decisions as a function of time. These classifiers corresponded closely with overt responses and, at each time point, appeared to track accumulated evidence with negligible contributions from earlier features. Fits of a drift diffusion model to overt responses improved when setting drift rate to be a linear function of trial-by-trial classifier output. These results indicate an ongoing, continuously accruing, memory strength signal that incorporates any recollective information and forms the basis for recognition memory decisions.

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