

*Detecting covert cognitive states from neural population recordings  
in prefrontal cortex*

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The neural mechanisms underlying decision-making are typically examined by statistical analysis of large numbers of trials from sequentially recorded single neurons. Averaging across sequential recordings, however, obscures important aspects of decision-making such as variations in confidence and changes of mind' (CoM) that occur at variable times on different trials. I will show that the covert decision variables (DV) can be tracked dynamically on single behavioral trials via simultaneous recording of large neural populations in prefrontal cortex. Vacillations of the neural DV, in turn, identify candidate CoM in monkeys, which closely match the known properties of human CoM. Thus simultaneous population recordings can provide insight into transient, internal cognitive states that are otherwise undetectable.