

Challenges to causal interpretation of decision-predictive brain signals

Before a person decides to perform a voluntary movement, several different predictive brain signals can be recorded: A readiness potential (RP) is observed in the EEG within the last second before a movement over motor-related brain regions. At longer time-scales of few seconds predictive fMRI signals can be observed. One important question is whether there is any evidence that these early choice-predictive signals causally contribute to the subsequent subjective decision and/or the subsequent movement. In this talk I will briefly discuss the signals themselves and then provide a framework with criteria for interpreting their causal role.