

Medial Prefrontal Cortex Adopts Multiple Frames of Reference for Value and Context during Maximization of Multiple Outcomes

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Presentation Abstract Summary Humans tend to make choices that lead to positive outcomes. However, they often need to maximize several, competing goals at the same time, leading to potential conflict between available options and the pressure to advance towards these goals. Here, we present an fMRI task in which participants accumulated two distinct resources over several trials. Rewards depended on the resource with the lower tally, thus enforcing a maximin choice rule. We found the ventromedial prefrontal cortex (vmPFC) to represent a value code that reflected both the chosen value and the disparity between the two resources, thus encoding the redress of this disparity. By contrast, a hierarchy in dorsomedial PFC encoded the relevant task features, with encoding increasing in complexity along a posterior to anterior axis. These findings can be understood in a framework which assumes that vmPFC reflects progress towards a goal, while dmPFC monitors relevant task features to guide behavior.

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