



Dual roles of reward and information in value-based decision making

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Presentation Abstract

The neural systems involved in learning from rewards and punishments have been well studied across species, and alterations in these processes are related to aberrant decision making in clinical populations. However, learning and decision making are complicated by the fact that observed events (e.g., your flight departing on time) are often determined in part by unobserved processes (e.g., the weather conditions en route). In reward-based learning, recent studies have suggested that humans direct exploratory behaviors toward those actions that reduce uncertainty about their underlying values. However, little work has examined whether participants actively select actions that would reduce uncertainty about unobservable states which are known to carry little direct reward value. Building on earlier work, I will present a novel theoretical framework and series of experiments investigating the degree to which humans incorporate both immediate expected value and information into subjective utility for guiding action selection. Behavioral and electrophysiological (EEG) data show dissociable contributions of informativeness and reward value to choice, and individual differences in their relative weightings might contribute to aberrant choices in clinical populations.

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