

A Neural Circuit for Economic Decisions

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Abstract

Economic choice entails the computation and comparison of subjective values. A fundamental contribution of neuroeconomics has been to show that subjective values are represented explicitly at the neural level during choice behavior. With this result at hand, the field has increasingly focused on the difficult question of where in the brain and how exactly subjective values are compared to make a decision. Lesion studies established a link between economic decisions and the orbitofrontal cortex (OFC). Furthermore, experiments in which rhesus monkeys chose between different juices identified three groups of neurons in this area. Offer value cells encode the values of individual goods available for choice. Conversely, chosen juice cells and chosen value cells represent the binary choice outcome and the value of the chosen good, respectively. Notably, these groups of neurons capture both the input (offer value) and the output (chosen juice, chosen value) of the decision process, suggesting that good-based decisions may be generated within a neural circuit in the OFC. Much research in recent years has been devoted to testing different aspects of this working hypothesis. In my talk, I will describe the most notable results emerging from this work.

Host: Hiro. Nakahara Lab for Integrated Theoretical Neuroscience