



Forum

Neural mechanisms of multiple option decision making



Dr. Bolton Chau

Assistant Professor
The Hong Kong Polytechnic University
Department of Rehabilitation Sciences



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Abstract

Decisions in real lives often involve considerations between many options. This is particularly true in modern days when information is abundant. However, our knowledge about neural mechanisms of decision making is mainly based on experiments that involve two options. It is broadly unclear how we process additional choice information when there are multiple options. Traditional rational choice theory makes assumptions that humans are rational beings that make decisions independent of the presence of distracting options that are poor in value or irrelevant. Although this view has been challenged over recent, there is little consensus about how exactly the presence of additional options affects decision making.

In this talk, I will focus on discussing the roles of a few neural regions during multiple choice decision making, including ventromedial prefrontal cortex (vmPFC), dorsolateral prefrontal cortex (dlPFC) and posterior parietal cortex. I will show that decision signals are commonly encoded in vmPFC and PPC, but in trinary choices decision signals in these regions are influenced by a distracting option in different ways. I will also show that in decisions with many options dlPFC has a specific role in filtering choice information.

Host

Rei Akaishi, Social Value Decision Making Unit, RIKEN CBS-TOYOTA Collaboration Center (ext.7194)