

Description of dataset: 4-Arm Bandit Task

Collected by:

Bahador Bahrami (Department of Psychology, Ludwig Maximilian University, Munich, Germany)

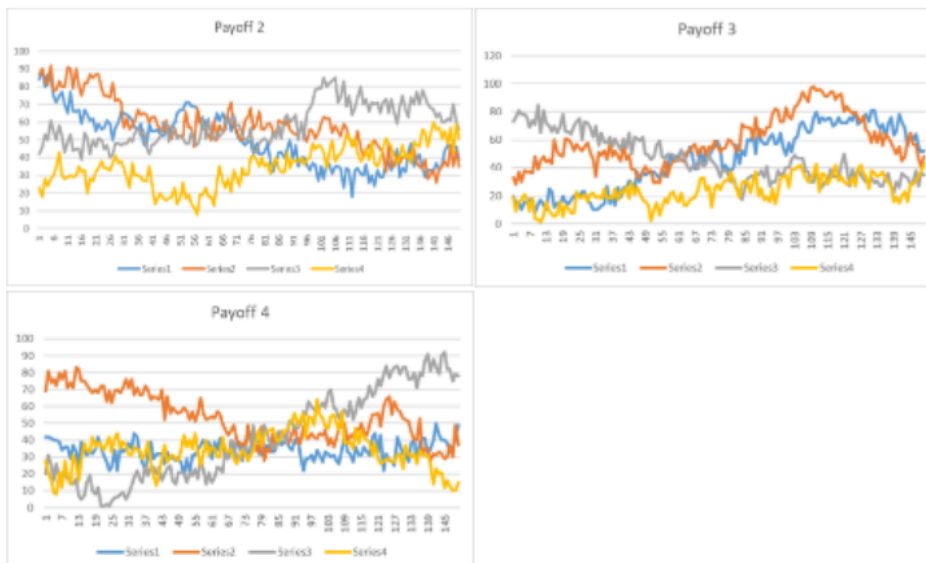
Joaquin Navajas Ahumada (Laboratorio de Neurociencia, Universidad Torcuato Di Tella, Buenos Aires, Argentina)

Participants

The dataset includes 975 participants, who completed an online version of the 4-arm bandit task in 2014. All participants gave their consent to carry the experiment. The experiment was approved by UCL Research Ethics Committee (project 4223/001). The dataset is anonymised, and does not include information about the participants' identity.

Task

The task followed the 4-arm bandit paradigm described in Daw et al. 2006¹. In this task the participants were asked to choose between four options on multiple trials. On each trial they had to choose an option and were then given information about the reward obtained by their choice. The rewards of each option drifted over time, in a manner also known as restless bandit, forcing the participants to constantly explore the different options to obtain the maximum reward. The rewards followed one of three drift schedules which were predefined, see below. The experiment lasted 150 trials. Participants failing to respond within 4 seconds missed the trial and moved to the next one with no reward.



Data structure

The data is stored in one table. Each row represents one experimental trial from one participant. Column names indicate:

id – A serial participant id.

choice - The choice made by the participant in the trial (1-4).

reward – The reward obtained by the participant in the trial following his choice.

rt – The choice time in milliseconds.

payoff_group – The reward schedule for this participant (see above).

reward_c1-4 – The reward for each option, according to the predefined reward schedule.

Reference

1. Daw, N. D., O'Doherty, J. P., Dayan, P., Seymour, B. & Dolan, R. J. Cortical substrates for exploratory decisions in humans. *Nature* **441**, 876–879 (2006).

