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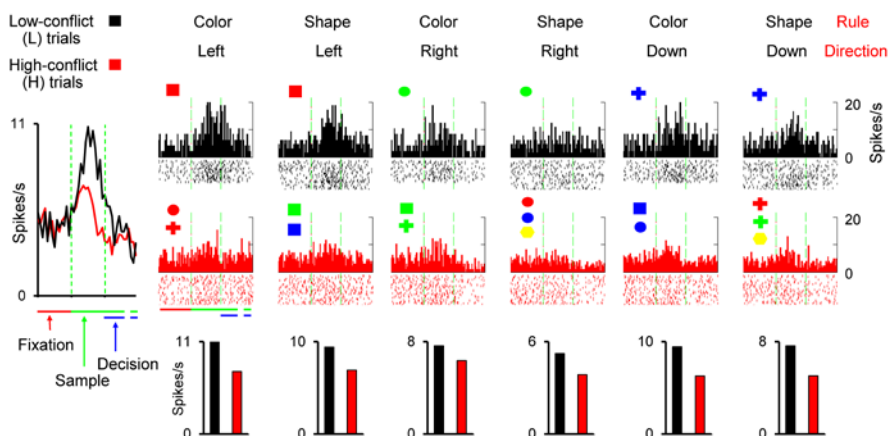
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In a changing environment we need to select the most appropriate behaviour-guiding rules to achieve our goals. We would like to study the neural substrate and underlying mechanisms of such cognitive flexibility. We have implemented various techniques such as lesion-behavioural study, single-cell recording and non-invasive brain stimulation in humans and also in animal models to address these questions. Establishing animal models of cognitive tests for recruiting higher cognitive functions such as abstract rule implementation and executive functions has opened new chapters in investigating the neural basis of cognitive processes which previously was considered as exclusive faculties of human brain function. Techniques used in our laboratory include behavioural and electrophysiology studies in animal models and psychophysical and brain stimulation studies in humans.

Research Projects

1. Understanding the role prefrontal cortex in executive control of goal-directed behaviour
2. Understanding the role of anterior cingulate cortex in cognitive flexibility



Single-cell activity recorded from dorsolateral prefrontal cortex represents conflict between behavioural rules (Mansouri *et al.* *Science*, 2007).

Selected significant publications:

1. **Mansouri FA**, Buckley MJ, Mahboubi M, Tanaka K. 2015. Behavioral consequences of selective damage to frontal pole and posterior cingulate cortices. *Proceedings National Academy of Sciences USA* 112(29):E3940-9.
2. **Mansouri FA**, Buckley MJ, Tanaka K. 2014. The essential role of primate orbitofrontal cortex in conflict-induced executive control adjustment. *Journal of Neuroscience*; 34(33): 11016-11031.
3. Buckley MJ*, **Mansouri FA***, Hoda H, Mahboubi M, Browning PGF, Kwok SC, Phillip A, Tanaka K. 2009. Dissociable components of rule-guided behaviour supported by different prefrontal and medial frontal regions. *Science* 32, 52-58. *Equal contributions.
4. **Mansouri FA**, Tanaka K, Buckley MJ. 2009. Conflict-induced behavioral adjustment: a clue to the executive functions of prefrontal cortex. *Nature Reviews Neuroscience* 10, 141-152.
5. **Mansouri FA**, Buckley MJ, Tanaka K. 2007. Mnemonic function of the dorsolateral prefrontal cortex in conflict-induced behavioral adjustment. *Science* 318, 987-990.