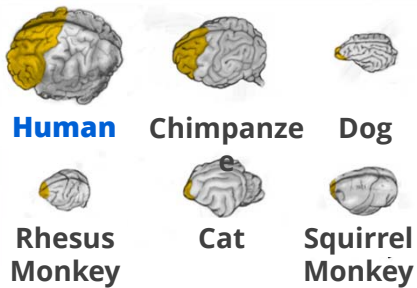


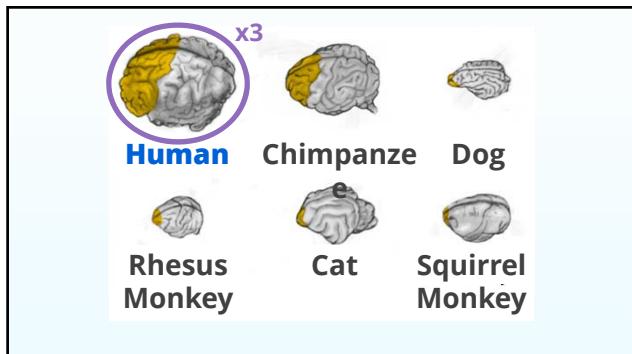
Executive Control

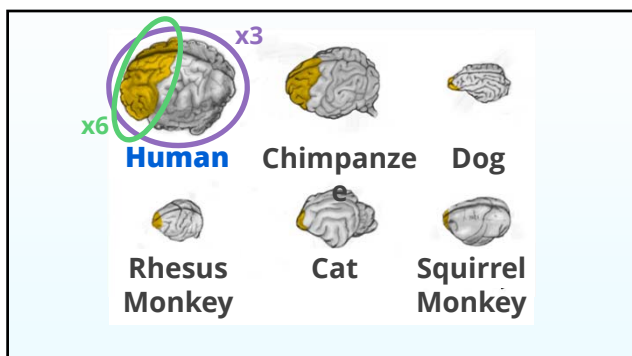
Prefrontal cortex and executive control of behaviour that it enables

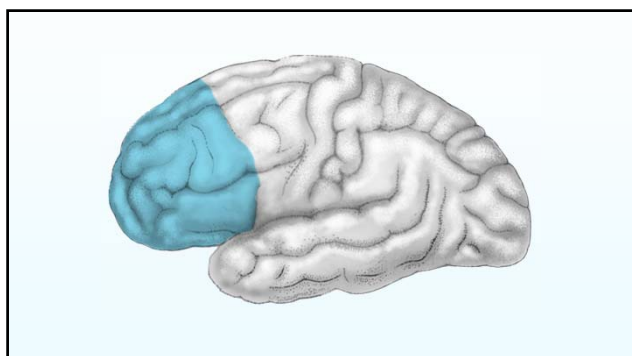
Prefrontal Cortex

- Plan
- Carry out complex tasks
- Build complex tools and technologies









Prefrontal Cortex

- Abstract thought
- Decision making
- Conflict analysis
- Social behaviour



Executive Control

Allows information processing and behaviour to adapt from moment to moment depending on our current goals



Executive Control Functions

- Goal maintenance
- Conflict recognition
- Inhibition
- Task-switching

Organization of Prefrontal Cortex

- The PFC is highly interconnected with other brain areas
- Action, attention, perception

Organization of Prefrontal Cortex

- Dorsolateral prefrontal cortex
- Ventrolateral prefrontal cortex
- Orbitofrontal cortex
- Anterior cingulate cortex

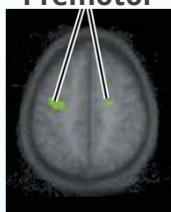
Organization of Prefrontal Cortex

Organized hierarchically from back to front



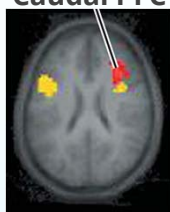
More complex

Premotor



Simple task

Caudal PFC

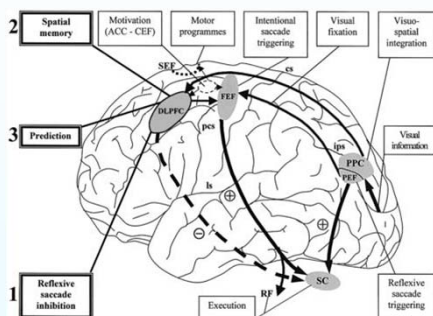


More complex

Rostral PFC



Most complex



Active Control of Tasks

- Inhibition: maintains focus
- Updating: keeps track of task-relevant information
- Switching: flexibly shift between

Driving: Inhibition

Stopping a left turn when you see people on the crosswalk

Driving: Shifting

Stopping the task of tuning the radio to see what is going on the road in front

Driving: Updating

Remembering the instructions from the radio about a blocked road and alternative routes to take

Executive Control Processes

- PFC controls activity in other parts of the brain
- Maintains activation

