

# Flexible goal-directed behaviour and internal attention: building blocks for consciousness?

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## Background

The brain exploits many selection processes (attentional processes) to elaborate sensory informations. In particular these processes filter and extract knowledge from the information received from the environment (external perception) and internally manipulate it (imagination, simulation).

Bio-inspired computational modelling research mostly focuses on external attention processes (e.g., details in the environment, object features) based on the sensors movements (e.g., “to look at interesting portions of an object”). However, this approach tends to ignore internal attention (i.e. the manipulation of internal representations) that is one of the key mechanisms underlying flexible behaviour and possibly consciousness.

## Objectives

- Using an integrated approach (neuroscience, psychology, computational models) to investigate brain mechanisms underlying flexible cognition, in particular goal-directed behaviour and internal attention, possibly underlying consciousness
- Building a bio-inspired detail computational model of internal attention processes underlying flexible goal-directed behaviour

## Architecture of computational model

