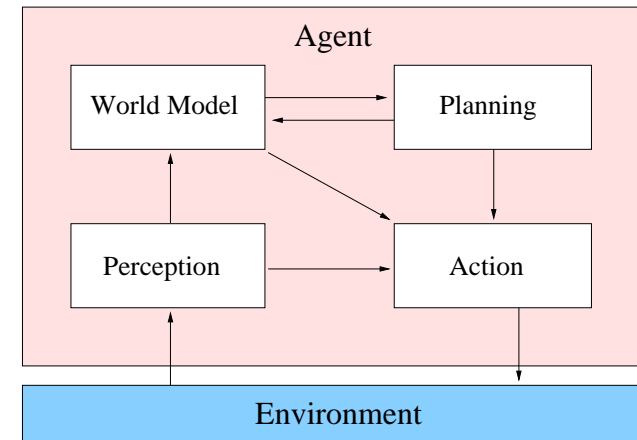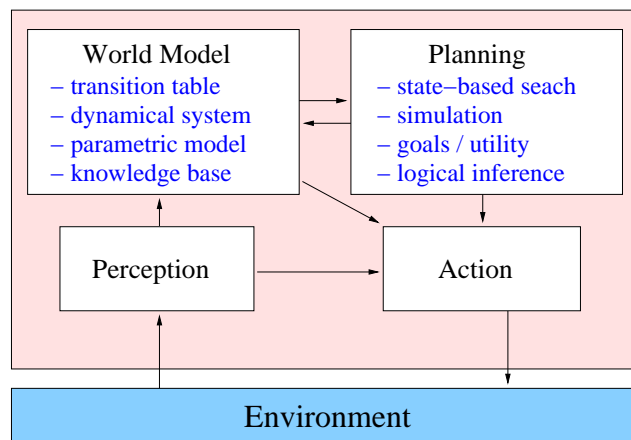# COMP9414/9814: Artificial Intelligence

12a. BDI Agents
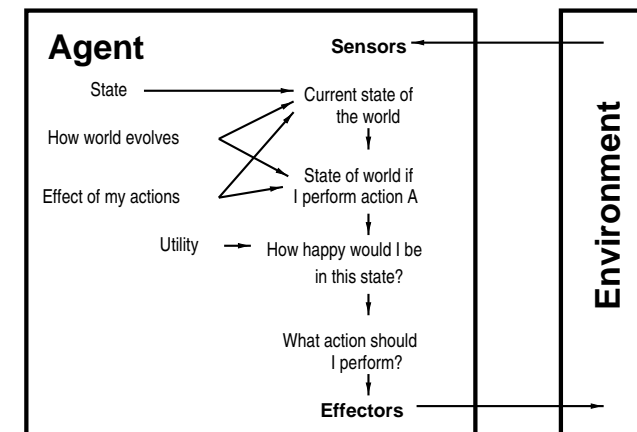
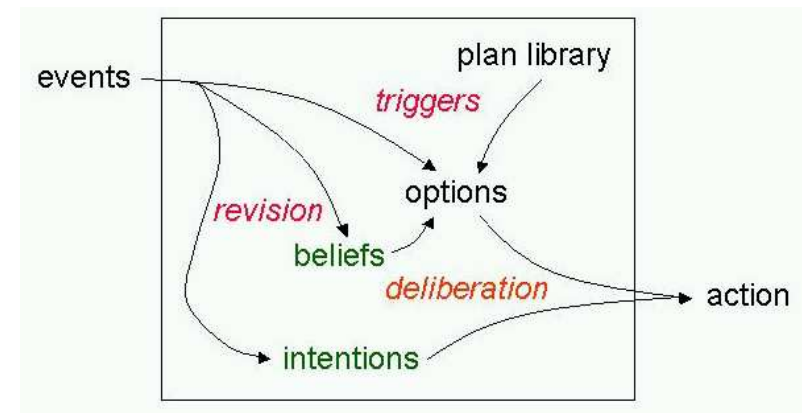## Planning Agent

Models and Planning

Planning Agent with Goals and Utility

BDI Agents

- Beliefs: Explicit representation of the world

- Desires: Preferred states of the environment

- Goals: Desires the agent has chosen to pursue (must be consistent)

- Intentions: Actions the agent has chosen and committed to
  - ▶ Pose problems for deliberation (how to fulfil them)
  - ▶ Constrain further choices (must be compatible)
  - ▶ Control conduct (lead to future action)

BDI Agent Interpreter

BDI Agent Interpreter

Abstract BDI Interpreter:
```
initialize-state();
do
    get-new-external-event(events);
    G := trigger(events);
    incorporate-goals(G, I);
    action := select-action(B, I);
    execute(action);
    observe(action, facts);
    update-beliefs(facts, B);
    update-intentions(facts, I);
until quit
```