

A Rational Agent

An agent (program) that does the "right" thing, given its goals, its abilities, what it perceives of its environment and its prior knowledge

Maximize benefits

Minimize costs

Benefits

The problem is solved

Costs

Search cost

Time and memory required to calculate a solution

Path cost

Determines the expenses of the agent for executing the actions in a path

Sum of the costs of the individual actions in a path

Total cost

Sum of search cost and path cost

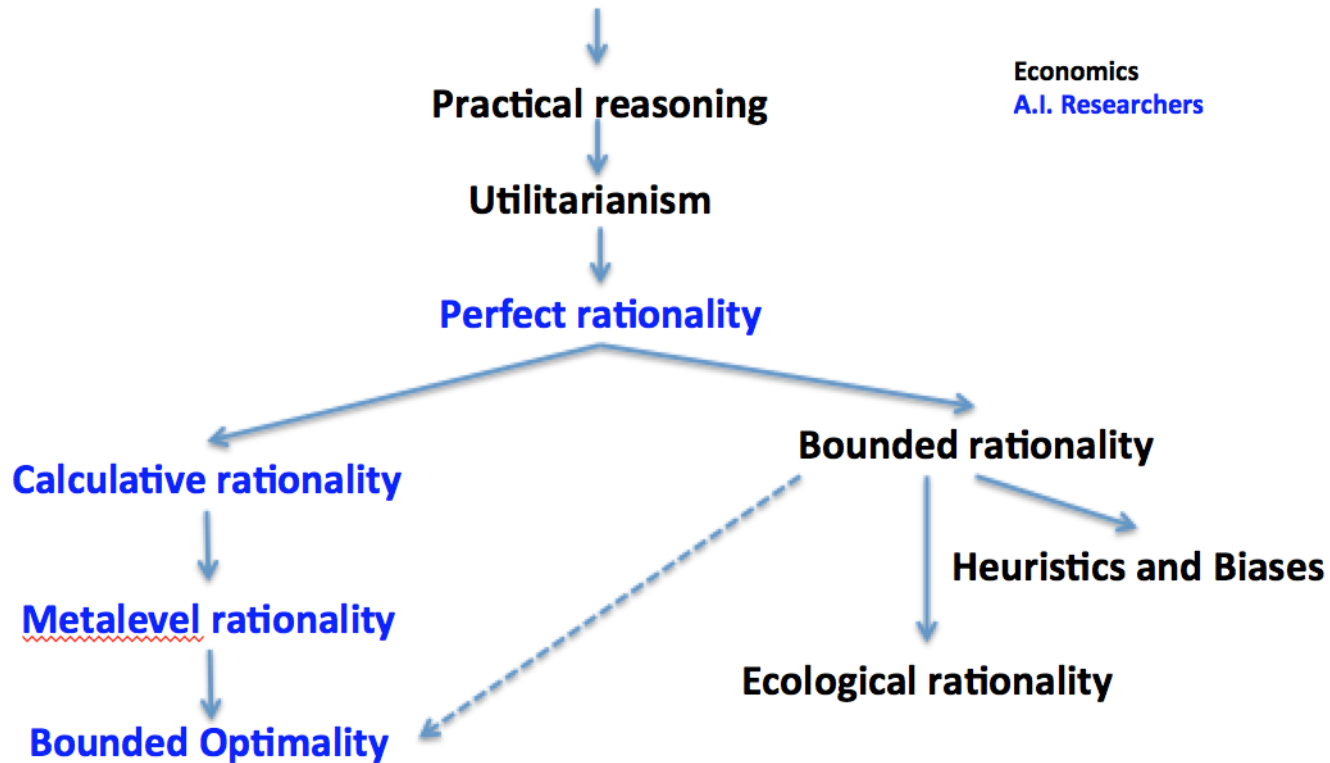
Overall cost for finding a solution

Satisficing



Bounded Rationality

A brief history of rationality



Created from Professor Russell slides

Some discussion

What do we take away from search?
What are other approaches?

What do we learn from search?

Different ways to control it

Uninformed v Informed

Pitfalls

What do we really “take away”?

Represent the problem

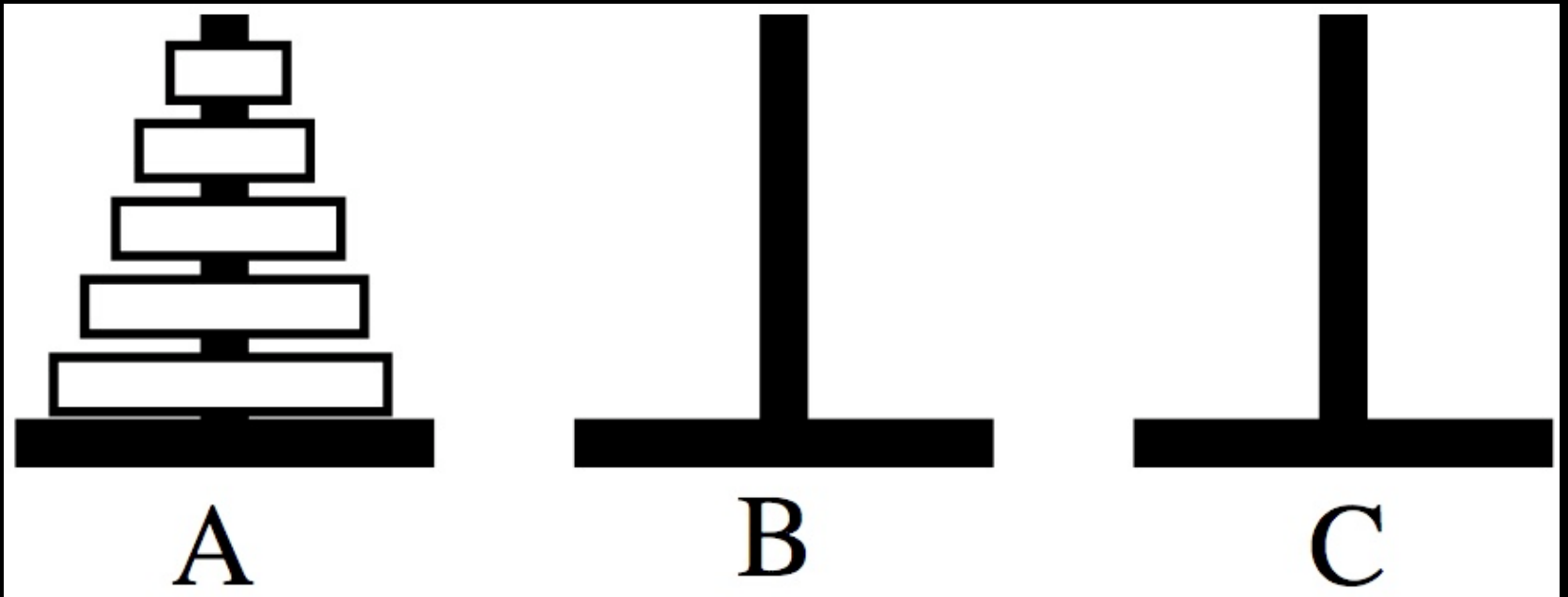
Represent state

Represent action

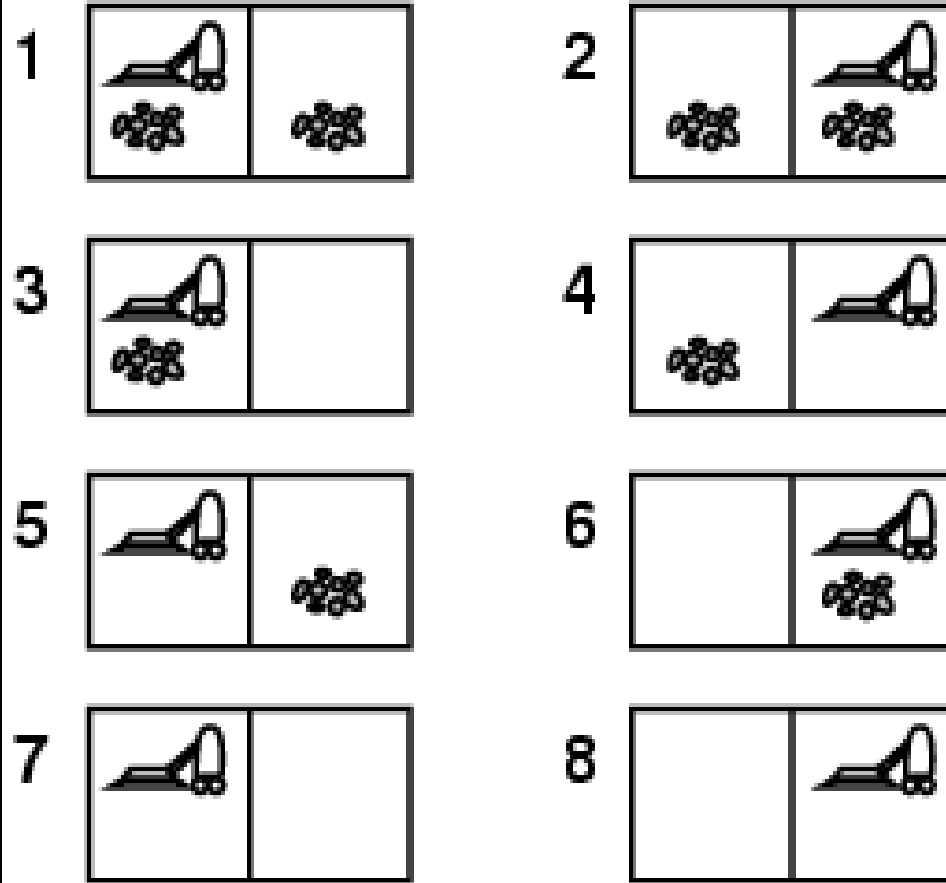
Represent goals

Evaluate progress

Tower of Hanoi



Vacuum World



Tiles

7	2	4
5		6
8	3	1

Start State

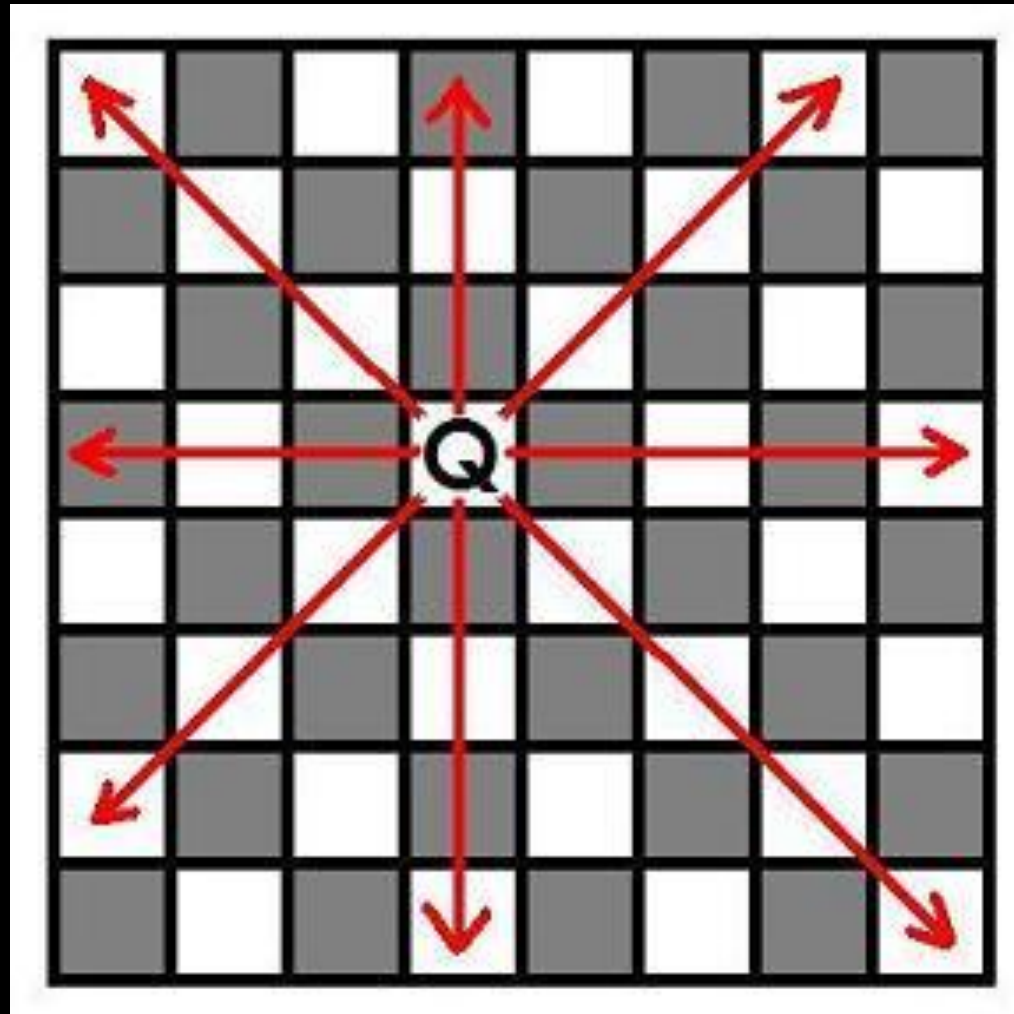
	1	2
3	4	5
6	7	8

Goal State

Sudoku

5	3			7				
6			1	9	5			
	9	8					6	
8				6				3
4			8		3			1
7				2				6
	6					2	8	
			4	1	9			5
				8			7	9

Eight Queens



Path Planning

