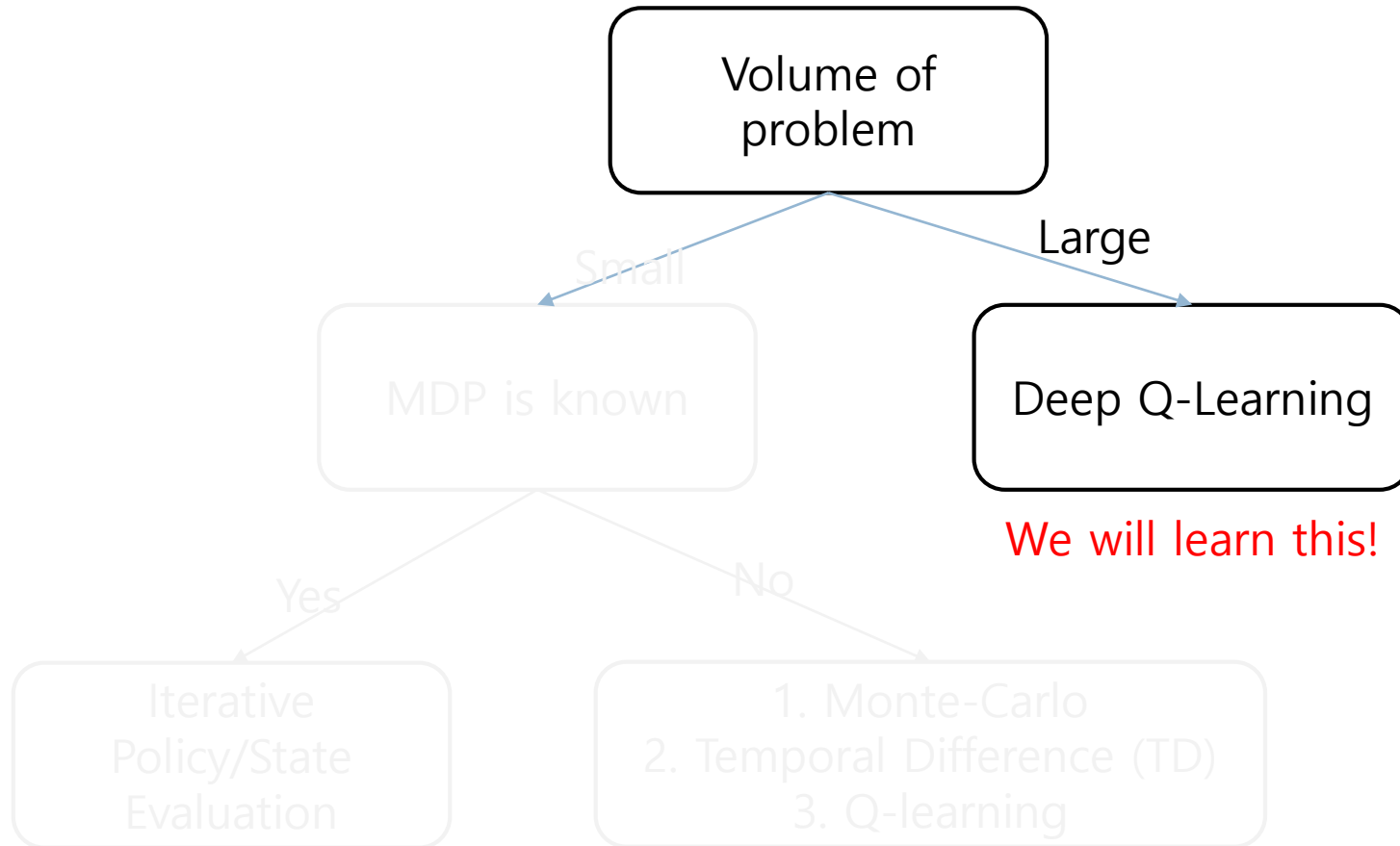
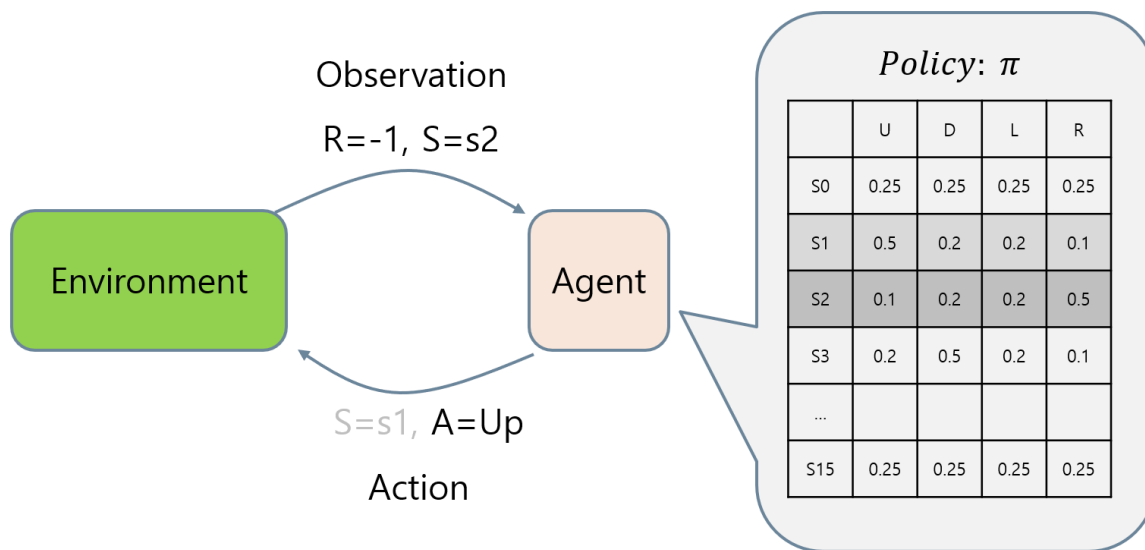


How to solve MDP problem



Limitation of Tabular Method

- **Previous models use tabular method for planning and learning**
 - They require a memory to store the policies for each state
 - But our real problem is more huge and complex
 - 큰 테이블을 사용하는 것은 비효율적
 - 실제 문제에서는 학습되지 않은 칸이 발생할 수 있음

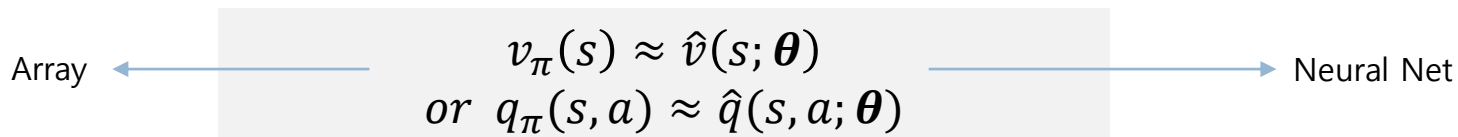


Backgammon: 10^{20} states
Go: 10^{170} states
Helicopter: continuous state space

Approximate Methods

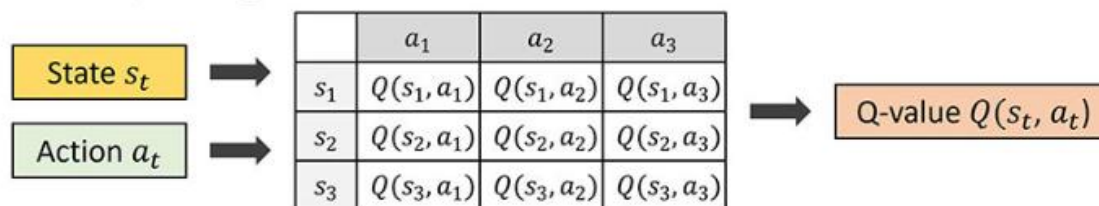
- **Solution for large MDPs:**

- Estimate value function with *function approximation*



- Generalize from seen states to unseen states
- Update parameter θ using MC or TD learning

Classic Q-learning



Deep Q-learning

