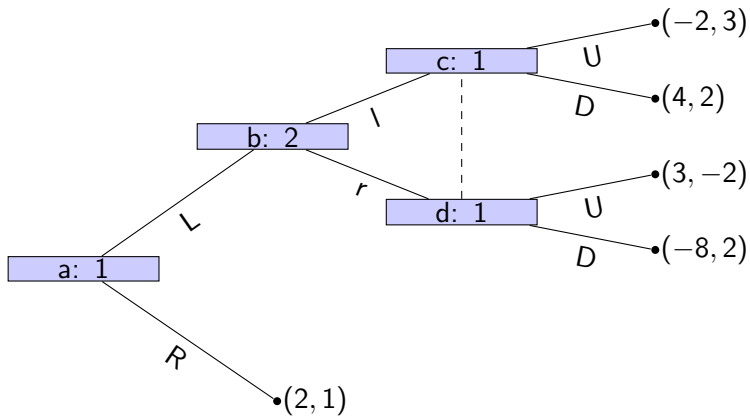
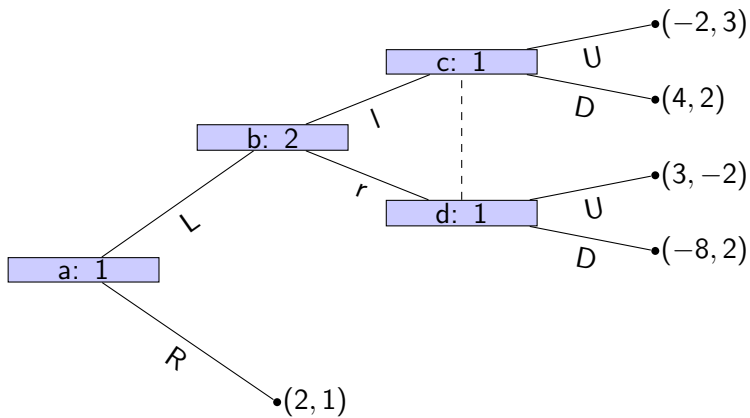


# Subgame Perfection

Game Theory

Vincent Knight





$$S_1 = \{LU, LD, RU, RD\} \quad S_2 = \{l, r\}$$

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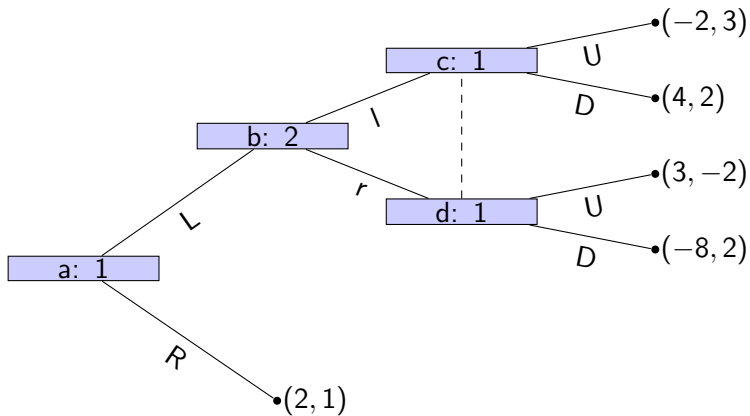
$$\begin{pmatrix} (-2, 3) & (3, -2) \\ (4, 2) & (-8, 3) \\ (2, 1) & (2, 1) \\ (2, 1) & (2, 1) \end{pmatrix}$$

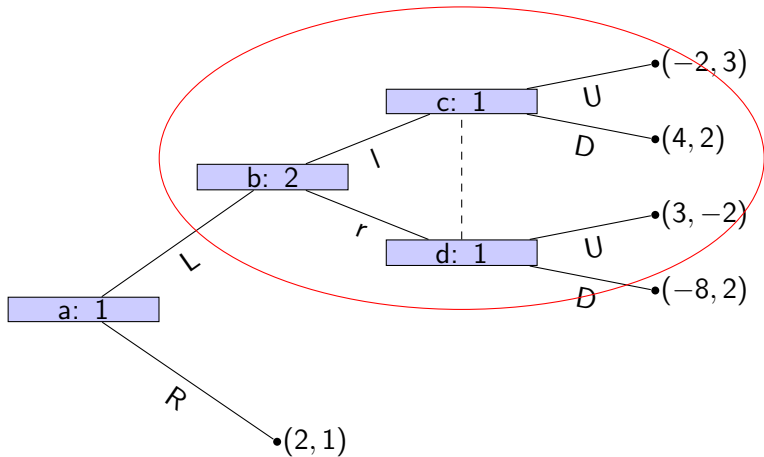
$$S_1 = \{LU, LD, RU, RD\} \quad S_2 = \{l, r\}$$

$$\begin{pmatrix} (-2, 3) & (3, -2) \\ (4, 2) & (-8, 3) \\ (2, 1) & (2, 1) \\ (2, 1) & (2, 1) \end{pmatrix}$$

Nash Equilibrium:  $(LD, l)$

- ▶ **Subgame:** In an extensive form game, a node  $x$  is said to initiate a subgame if and only if  $x$  and all successors of  $x$  are in information sets containing only successors of  $x$ .
- ▶ **Subgame perfect equilibria:** A subgame perfect Nash equilibrium is a Nash equilibrium in which the strategy profiles specify Nash equilibria for every subgame of the game.





Nash Equilibrium:  $(LD, l)$

$$\begin{pmatrix} (-2, 3) & (3, -2) \\ (4, 2) & (-8, 2) \end{pmatrix}$$