Strategies in Extensive Form Games

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Strategies

• A strategy: How to participate/act in a strategic interaction.
• In normal form games: Strategy = Action
• In extensive form games: Strategy?
• Examples (Two variants of Prisoners’ Dilemma)
Strategies (Cont..)

• A strategy is a complete plan of actions for playing a game (Strategic Interaction)

• A strategy of a player is basically a rule that describes what action he is supposed to take at each decision node belonging to him; in other words: what to do under every contingency, no matter how unlikely a situation is.
Strategies

• In the prisoners’ dilemma, each player has two strategies: confess (C) and do not confess (D)

• In the variant, the prisoner who moves first still has the same two strategies, but the prisoner who moves later has 4 different strategies.

• What are those 4 strategies?
One more example

Player 2 has a at the initial node and play a2 at the later node a2

1) ay
2) bx
3) d
4) by
Strategies and Plans of Action

- Strategies contain actions specified for situations which may look implausible.
- Why should a player worry about the need of making choices at later stage after taking an action which would end the game at early stage.
  - Other players’ beliefs
  - What will happen if by mistake the player chooses some other action which would take the game to the stage where his action is not specified.