Strategic Moves

ECON 420: Game Theory

Spring 2018

Cheap Talk

- ► Players may attempt to communicate their intentions before the game begins
 - ► This adds a new first-stage to the game
 - This adds a new mist stage to the game

► Communication may be *credible* or *non-credible*

Strategic Moves

- ► Any action that changes the rules of the game is a strategic move
 - ► Adding stages, changing payoffs, adding/removing choices
- ► Examples: Commitments, threats, promises
- ► The goal of a strategic move is to alter subsequent stages to the advantage of a player
- ► Strategic moves must be *observable* and *irreversible*

Unconditional strategic moves

- ► Sometimes useful for players to *commit* to a certain strategy
 - ► "Whatever you choose, I am going to do X"
- ► Creates a first-mover advantage for the player
- ► Example: Extra-credit game (splitting points)

Conditional strategic moves

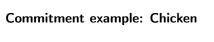
- ▶ Players may create *response rules*
 - "If you do X, I'll do Y"
- ▶ Player may be trying to *deter* or *compel* the other player to do something
 - ► "If you do X, I'll do Y which will hurt you"
 - ► "No dessert if you don't finish your broccoli"
- ► Players may *promise* certain behavior

▶ Players may *threaten* certain behavior

- ▶ "If you do X, I'll promise to do Z, which will make you better off"
- "Santa will bring you presents if you're good"

Credibility

- ► Threats must be costly for the player to carry out
 - ► Payoff is lower if the player follows through with a threat
 - ► Nobody wants to prevent their child from eating dessert
- ► To be credible, all players must remove that the high-payoff options will be removed from the game if the desired action is not taken
- ► Example: Doomsday device from Dr. Strangelove



Commitment

- ▶ The rollback equilibrium is dependent on the credibility of the commitment
- ► How can a player credibly commit in the game of chicken?



Dominance and threats

- ► China has a dominant strategy in the trade game (closed)
- ▶ But if the US can credibly threaten to close if China closes, then China plays their *dominated* strategy at equilibrium
 - ► Game rules have changed, strategies from original game not complete

Promise example: Restaurant pricing

Credibility

the second stage

- ► Strategic moves are *observable* and *irreversible*
- ► But in all situations, the first-mover has an incentive to change their minds in
- ► Credibility requires reputation, or some commitment device

