CMS.608 / CMS.864 Game Design
Spring 2008

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<u>Game Theory</u>
Prisoner's Dilemma
- what is "rational" play?
- what is optimal play?
- you have to assume that the other player the same decision that you will – that's one line of argument – so stick to your story
- the other line of reasoning says you should minimize your losses – so defect!
- "game theory has mostly stuck to economics – it's marketable!
- "it predicts people's decisions better than probability"
- game theory for games works best for games designed for game theory
- let's talk about some cheesy, annoying winning strategies
    - a lot of discussion about Super Smash Brothers…
- "degenerate strategies"
    - any game that allows "infinite" cycles of damage
- optimal strategies don't allow for decision making, maybe skill
- so if you have a comprehensive possibility space (which applies to computer games too!) but there's a narrow slice that guarantees a win, it's a problem
- important when designing AIs
    - you can't just take the optimal strategy
    - "what would a player do?"
    - if it's really an optimal strategy, the game is impossibly hard
    - otherwise, it can be just too predictable
    - but players don't like it when you "let" them win (as in trivially easy)
- it can be fun to lose!
- optimal alliances?