BREAKOUT GROUP #2
Games, Anticipation of Adversary Activity

• Anticipation of an adversary actions is difficult

  - Humans play games differently than computers

  - Adversary may make many decisions (moves) before you are aware of action

  - Players abilities may be asymmetric

  - Rational vs. irrational decisions in adversary actions

  - Ability for an advisory to "change the rules" given group size

  - Limited observations, limited of understanding of rules and goals

• There are many strategies to mitigate an adversary

  - Good, safest, vs. optimal (e.g., exploitation of the optimal strategy will allow the opponent to learn from their mistakes and correct it)

  - Containment can aid in allocation of resources (reducing the search space)

• Time horizon in the final outcome is necessary component of understanding the adversary

  - Appearance of a stalemate or slowing loosing while wearing you down

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What is good?

- Brute force searches are fast
- Strengths are in line with the utility of computers
- Problems can be broken down into heuristics

Challenges

- Using containment (limiting choices) given limited knowledge to gain insight
- Identification of supply chains with limited observations
- Understanding tendencies and value systems (limited observations)
- Address larger strategic goals better (both for the adversary and the game)
- Relax constraints and parameters
- Need an improved language to talk about opponent modeling
- Dealing with imperfect, incomplete, or misleading information
- Modeling the adversary
- Automatic adversary generation
- Game design