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