Game Theory Applications to 21st Century Deterrence

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What is Game Theory?

• Solution Concept
  • Fresh set of economic assumptions: payoffs & strategy
  • Nash vs. the Market: ideal consumer vs. ideal strategist
  • Instrumental rationality: Mao – Putin – Kim Jong Un

• Narrative Lens
  • Counterintuitive behavior and ultimate rationale
  • Samuel Popkin (1979) Rational Peasant
  • Trusted Guardian (2008) Information Sharing among Allies
Critics of Game Theory from Policy Community

• Proofs of strategy equilibrium
• Preference orderings and functions
• Complex situations: n-person games, partial information, new options during a crisis
Response to Critics

• Political “Science” in general
  • Comparative case studies; large-n datasets; historical tracing

• High stakes of the Cold War

• Social Institutions (e.g., arms control)

• Logical Clarity – Deductive Accounting

• Alexander George on policy relevant knowledge
Game Theory on Deterrence, Yesterday

• Powell (1990) Search for Credibility
  • Risk-taking vs. limited war bargaining, pendulum swing

  • Strategic arms control and proxy wars

• Huntington (1957) and Feaver (2003) Principal-Agent Incentives
  • Professional military advice and deterrence stability
Game Theory on Deterrence, Tomorrow

• Game Play: Connecting Nash equilibrium and game design at political-military level
• Attrition: Mutually beneficial agreements (arms control?) and breaking the stability-instability paradox
• 2 + N Games: Alliances for resolve vice capability
Bridging the Game Theory Gap, Today

• STRATCOM Academic Alliance (March, June, July)
• DOD MORS (e.g. Deterrence Community of Practice)
• UCSD/Minerva on Cross-Domain, Multi-Domain
• JHU-APL addressing policy maker skepticism
• PME Network Nodes
• Concluding Theme: Bureaucratic slack and education to grow deterrence as a vocation