

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
- **Jervis (1984) Stability–Instability Paradox**
 - 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