Analytical Gaming

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Exceptional service in the national interest

What is wargaming?

A wargame is a dynamic representation of conflict or competition in a synthetic environment, in which people make decisions and respond to the consequences of those decisions [1]

Naval wargame played at the US Naval War College (1954)
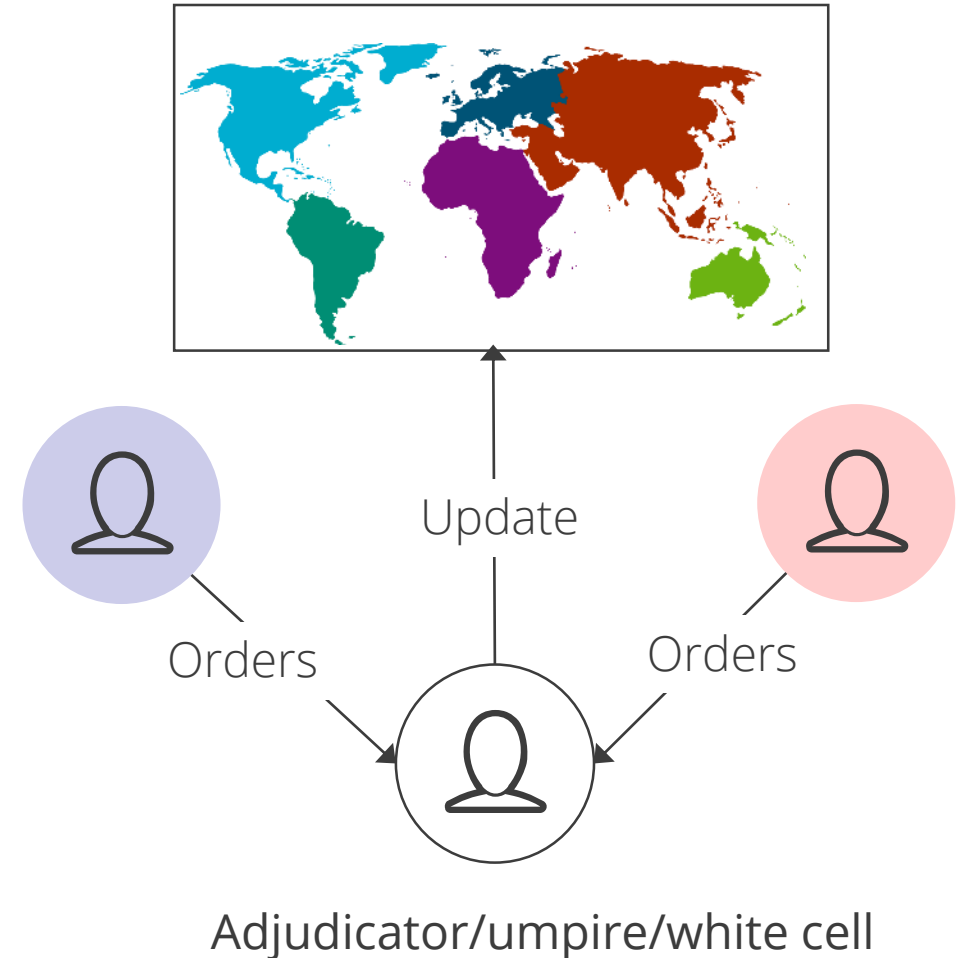
South China Sea wargame organized with CNAS and NBCs *Meet the Press*

Political-Military Wargaming (RAND, 1950's)

Update

Orders

Orders

Adjudicator/umpire/white cell

[1] Perla, "Terms of Reference", MORS Special Meeting, Wargaming Workshop, October, 17-21 October 2016.

Some limitations of traditional wargames

- Experiential rather than experimental
  - Player engagement and interaction
  - Focused on exploration rather than analysis
- Potential biases
  - Sample bias
  - Adjudication bias
  - Replication challenges
- Hard to collect data
  - Limited runs
  - Often qualitative
  - Data collection is often incidental
  - Wargame design is treated as intellectual property
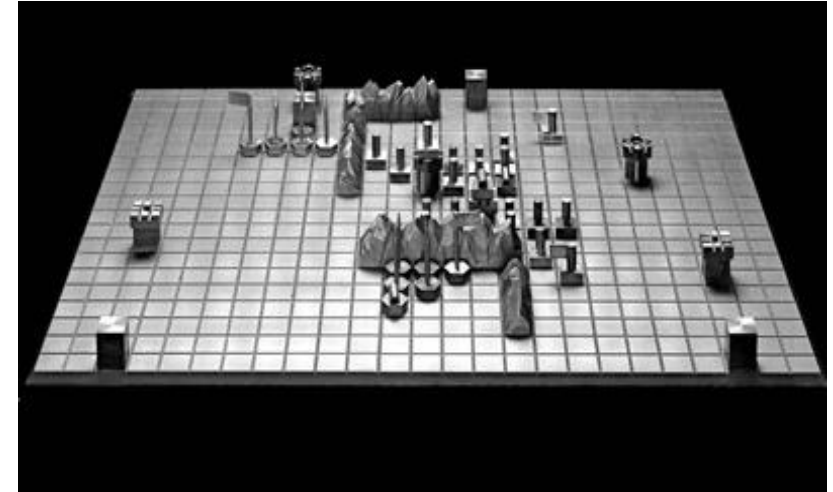
Analytical games are laboratories to study strategic interaction
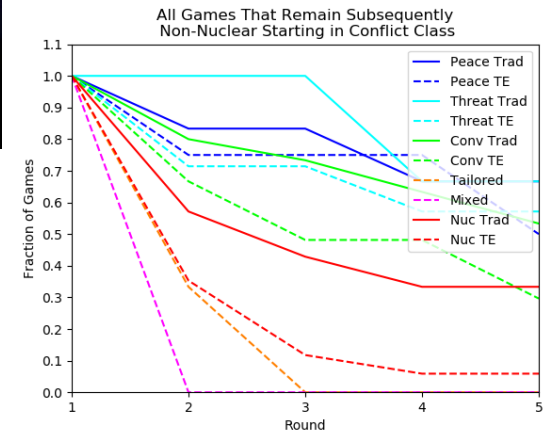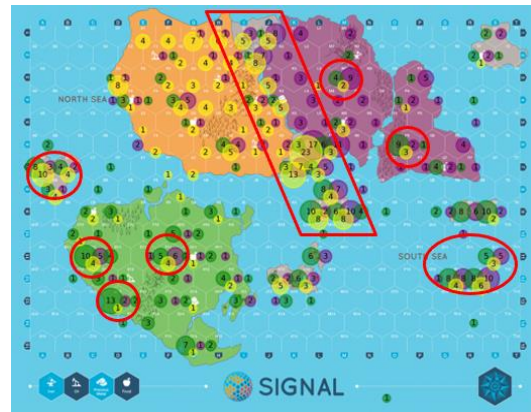
Experimental Sciences

- Rigorous
- Data Generating
- Repeatable
- Inquiry Focused
- Methodical

Analytical Wargaming

Wargaming

- Flexible
- Exploratory
- Elite Play
- Adjudicated
- Artisanal
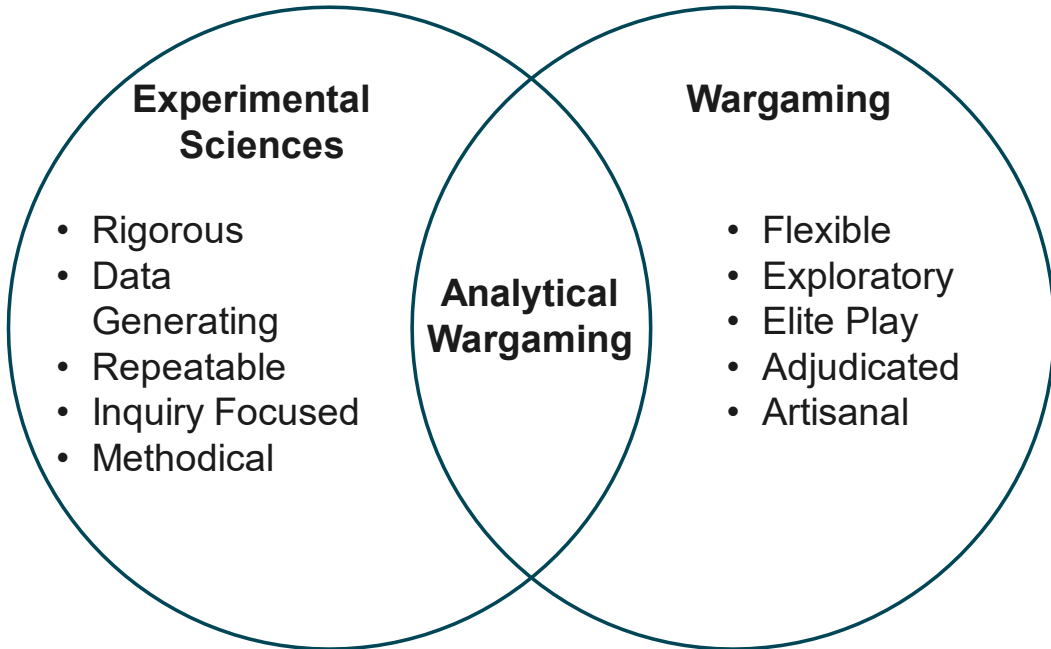
- Generates synthetic data for theory development and testing
  - Especially valuable where observational data is limited or non-existent
- Provides a new type of experimental tool for social science research
- Addresses limits of existing wargaming methods related to causal inference, generalizability, and replicability

Analytical games complement traditional wargames

Traditional wargames focus on insight generation and exploration of strategies for players.
- Seminar games
- Tactical games
- Matrix games

Analytical wargames focus on capturing large-n data sets for analysis.
- Identifying possible causal relationships
- Proving support for hypotheses
- Bracketing scenario variables

Traditional wargame approaches and analytical games, used together, enables iteration and deeper analysis of complex strategic interaction scenarios.

Development, C., and D. Centre. 2017. "Wargaming Handbook". Technical report, Ministry of Defence - The Development, Concepts and Doctrine Centre.

Traditional Wargames

Insights & Theory

Research Questions

Online Play

Tabletops

Analytical Wargames

https://warontherocks.com/2019/08/wargaming-has-a-place-but-is-no-panacea-for-professional-military-education/

Cyber-Physical-Social Infrastructure Climate Change Nexus is a topic that is well-suited for analytical gaming

Purple National Goals

1. Any intervention should be supported by a majority of negotiating participants, if not a complete consensus.

2. Intervention should be carried out in a manner minimizing potential extra-regional effects.

3. Maintain a reserve of at least 2 economic and 1 technical resources.

Crisis Card

Environmental monitoring suggests an outside country, Orange, is attempting to undermine the cooperative SAI initiative with increased carbon emissions.

The cooperative SAI initiative stakeholders need to decide an appropriate response.

Diplomatic Response

Approach Orange with environmental monitoring evidence and attempt to mediate a solution.

1 econ resources
0 tech resources
4 diplomatic resources

Cooperative Technical Response

Pool scientific resources to collect additional data and better understand potential implications for the SAI initiative.

3 econ resources
3 tech resources
1 diplomatic resources