Seminar and Matrix Games

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Schelling: no person, “no matter how rigorous his analysis or heroic his imagination” can “draw up a list of things that would never occur to him.”

The pitfalls of authoritative wisdoms.

Seminar and matrix games

Figure 1. Characteristics of the continuum of wargaming styles.

Pournelle 2017
Robust evidence from research on intelligence analysis and prediction shows that crowds outperform individuals (Tetlock and Gardner 2015, Brynen 2017), especially when some framework for opinion aggregation is provided.

Seminar games

Common one, two, or three turn games, in which participants are typically:

- given a scenario
- outline their response(s)
- the scenario is updated based on the actions taken
Seminar games

- The game may be one giant BOGSAT producing a consensus course of action (COA) or analysis
- Break-out groups/teams may produce separate COAs, which are then collectively adjudicated between turns
- Injects
- Turn based vs in-stride adjudication

Drug-resistant E. Coli pandemic crisis simulation, G20 health ministers

Claude X pandemic simulation, Johns Hopkins University

“Zefra” seminar wargame, US Naval Postgraduate School

Gaming the Syrian civil war (Brookings) and ISIS (Atlantic Council).
Seminar games

**ADVANTAGES**
- easy to organize
- neat, clean decision-making
- familiar and predictable
- low-risk
- lower cost
- discussion-oriented

**DISADVANTAGES**
- limited number of moves (often 2-4)
- limits interaction
- limits adversarial play
- no premium for getting inside the enemy’s OODA loop
- neat, clean decision-making
- often pre-scripted
- glorified BOGSAT

Matrix Games

- Matrix games (which, despite the name, involve no actual matrix) are a form of free-form narrative gaming.
  - Few rules.
  - Player actions limited only by real-world capabilities and plausible outcomes.
  - Well-suited to complex, multi-sided issues.
  - Generate a series of analytical discussions over priorities and policy alternatives; prioritization; actions; contributing and inhibiting factors; second and third-order effects.
- Fast and easy to play.
- Easy to design and facilitate.*
Matrix Games

Matrix games have been used by:

Canada
✓ Security planning, Vancouver Winter Olympics
✓ Support for strategic planning (DRDC)

United States
✓ Professional military education (US Army War College, NDU, others)
✓ Analyst training, CIA
✓ DoD wargaming

UK
✓ MoD wargaming (Dstl, Defence Academy)
✓ FCO regional analysis

Australia
✓ Analysis of multi-agency planning

France
✓ Defence language training

The procedure is deceptively simple:

1. The current player announces an ACTION and its intended EFFECT.
2. The current player offers a series of PRO arguments as to why the ACTION would be successful.
3. Other participants offer PRO and CON arguments.
4. The ACTION is resolved based on the balance of arguments put forward.
BRITISH PLAYER: “I will assault the Argentine troops in Grytviken using my Royal Marines and SAS elements. I think I will be successful because, first, my troops are of superior quality; second, the enemy is isolated and demoralized; and third, I have fire support from HMS Antrim and Plymouth.”

ARGENTINE PLAYER: “I think the assault will fail because my troops are more numerous and in defensive positions.”

Discussion about these arguments follows, and each is applied as a positive or negative dice roll modifier.

Combat is resolved, and the British player secures a major victory. It is decided that Argentine garrison has surrendered after a very brief fight.

How to Play: Adjudication (weighted probabilities)

- Each clear and plausible PRO argument generates +1 modifier.
- Each clear and plausible CON argument generates -1 modifier.
- Modified score of 7+ (on 2d6) required for success:
  - 12+ outstanding success
  - 10-11 major success
  - 7-9 success
  - 5-6 failure
  - 3-4 major failure
  - 2 (or less) disastrous failure

- Why use dice?
  - Outcomes are uncertain.
  - Fog and friction of foreign policy (imperfect information/imperfect execution).
  - Impact of exogenous factors and events.
How to Play: Adjudication (other systems)

- Crowd-sourced probabilities
  - discussion, followed by “probability of success” estimates
  - use median probability
  - variation in estimates may point to issues that need further (post-game) discussion

- Voting
- Consensus
- Adjudicator decision

a few more basics

- initial rules and ongoing effects
- spendable bonuses
- privileged arguments
- secret actions
- levels of protection, big projects
- negotiations, agreements, and interaction
- consequence management
ISIS CRISIS

- strategic/operational level matrix game of the counter-Daesh campaign in Iraq, 2014-

- Daesh
- Iraq
- Kurds
- "Sunni opposition"
- US
- Iran

High North

- 3 year turns
- 5-6 teams
  - Russia (political)
  - Russia (military)
  - UK (+Canada)
  - US
  - Norway (+Scandinavia)
  - China
  - "the spirit of capitalism"
- spendable bonuses as cards
A Reckoning of Vultures

*In the distant Republic of Matrixia…*

*A Reckoning of Vultures* is set in the capital of the fictional Republic of Matrixia.

There, in the ornate Presidential Palace, surrounded by his most loyal Presidential Guards, the President-for-Life is on his death-bed—and various power-hungry factions are jostling to take power themselves.

Once the President passes, competition between these would-be successors will escalate to open conflict, until the Central Committee of the Ruling Party can meet and agree on a new leader…
The Central Security and Intelligence Directorate (CSID) are Matrixia’s shadowy—and much-feared—secret police, responsible for maintaining a close watch on both dissidents and potential rival power centres within the regime. Although lacking large numbers of armed personnel, covert CSID operatives are well-placed to blackmail, influence, sabotage, subvert, or spy.

The Matrixian Armed Forces can call upon large numbers of military personnel located in three major military bases around the capital. Inter-service rivalries and the influence of other factions may mean, however, that not all MAF units are loyal or obey orders.
The Ministry of the Interior has authority over police and emergency services personnel in the capital. Although MoI units are well-positioned across the city, most are inferior in combat capability to those of the regular military.

Much of what happens in Matrixia is manipulated by a group of rich and powerful Oligarchs, who both control much of the business sector and have deep ties to the country’s major criminal syndicates. Although they have only a few private security guards and mercenaries to safeguard their position, they have considerable wealth that can be used further their political ambitions.
the factions

The National Union of Toilers represents the downtrodden workers of the country. NUT hopes to mobilize the masses and advance their political agenda through strikes, demonstrations, and direct action. If they can arm some of their followers and form a workers’ militia, they could become very powerful indeed.

game sequence

1. **As Vultures Circle** (matrix game)
   - the President-for-Life is dying
   - no open warfare
   - plot, prepare, subvert
   - when the marker track reaches 0, the President dies

2. **By Beak and Talon** (matrix game)
   - the President-for-Life is dead!
   - anything goes
   - control of strategic locations will influence final phase
   - when the marker track reaches 10, the Central Committee of the Ruling Party meets

3. **The Buzzards’ Feast** (voting game)
   - the Central Committee decides on a new President
   - money and control of strategic locations matter
set up

Place the assets listed under “deployment” on your briefing sheet on the map in the following order:

1. **Matrixia Armed Forces (MAF)**
   - Special rule: MAF commander must declare whether they hold rank in the Army, Navy, or Air Force.
2. **Ministry of the Interior (MoI)**
3. **Oligarchs**
4. **National Union of Toilers (NUT)**
5. **Central Security and Intelligence Directorate (CSID)**

As Vultures Circle

1. **Central Security and Intelligence Directorate (CSID)**
   - roll for health of President at start of each CSID turn
2. **Matrixia Armed Forces (MAF)**
3. **Ministry of the Interior (MoI)**
4. **Oligarchs**
5. **National Union of Toilers (NUT)**

REMEMBER: No fighting!
By Beak and Talon

1. **Central Security and Intelligence Directorate (CSID)**
   - Roll for meeting of Central Committee at start of each CSID turn (after first)
2. **Matrixia Armed Forces (MAF)**
3. **Ministry of the Interior (MoI)**
4. **Oligarchs**
5. **National Union of Toilers (NUT)**

Anything goes!

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The Buzzards’ Feast

1. **Determine the votes each player receives from the control of strategic locations.**
2. **Each player secretly rolls 2d6.**
   - May reroll one die for Parliament, Party HQ.
   - May temporarily “sell” die, sight unseen, for cash.
3. **Total and reveal the votes (locations+dice). If one player has majority, they are declared winner. If not, the lowest-scoring player is eliminated, and return to Step 2.**
   - At end of game, player with most cash places second. Those without escape route are imprisoned, or worse...
Advanced matrix gaming

- common issues
- larger or distributed groups
- hybrid games
- matrix game design

common issues

- ACTIONs that aren’t actions
- talking too much
- doing too much/magical conjuring
- representing time
- goals and victory conditions
- social engineering
- problem participants
  - “it’s too simple”
  - endless arguing
- influential seniors
Matrix Game SWOT Analysis

**STRENGTHS:**
- Fast
- Easy
- Flexible
- Non-kinetic / Effects / DIME
- Qualitative

**WEAKNESSES:**
- Doesn’t look expensive
- Not quantitative
- Needs experienced facilitator
- Needs facility with language

**OPPORTUNITIES:**
- Cheap
- New / Innovative
- Transportable
- Multi-Domain
- Multi-Agency

**THREATS:**
- Lacking Academic papers
- Lacking Military Robustness
- Concern about “only 1 action”
- Some people don’t get it

- Designing a Matrix Game can be done quickly with the minimum of fuss.
- Participating in a Matrix Game does not require understanding of complex and unfamiliar rules.
- Matrix games can cover a wide variety of possible scenarios, including conceptual conflicts. The types of problems covered in the game are not limited by the model.
- Matrix games are especially good in the non-linear, affects based domain.
- Matrix games that with simplistic scenarios are especially useful for non-analysts.
- The fact that the game requires little infrastructure can be a problem — but doesn’t look novel.
- The non-quantitative nature of the game can facilitate analysis.
- The game requires an experienced facilitator to run it.
- A facility with language is important, which might present problem with multi-national participants.

**OPPORTUNITIES:**
- Matrix games are extremely inexpensive (they work well with short sessions lasting about half a day).
- They are seen to be new and innovative (despite being around since 1980).
- They are easy to transport, requiring only pen and paper — with perhaps a few maps and counters.
- They work well in multi-domain, multi-agency contexts allowing all actors to participate equally.
- There is a paucity of academic research in this area.
- The game is adaptable to a doctor figure assuming the game structure as “just making things up.”
- Some players have great difficulty with the concept of “only 1 action per turn.”
- Some players are fundamentally unable to grasp the concept, which in a small game has a disproportional effect.

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**ISIS CRISIS for 30+**

- individual members within some teams had personal objections
- some team members had vetoes over some sorts of actions, or other special capabilities
- teams had differing rules for reaching a collective decision
- restriction on who could meet whom
- map projected into large screen
Matrix game design

- Consider your purpose.
  - Is a matrix game suitable?
- Think about your players.
  - Knowledge, seniority, expectations
- Decide on the actors.
  - 4-6 optimal
  - Opposing views, rich interrelationship
- Consider how physical components will affect gameplay.
- Briefings should inform and encourage appropriate perspective.
- Consider everything else:
  - Venue, time, breaks, material to improvise with
- Keep it simple…

The Mouat Rule of matrix game design:

Not to be forgotten…

Rules and modifications should not place an undue burden on game flow.
matrix game resources

- Tom Mouat’s matrix game page
- PAXsims matrix game materials
  - https://paxsims.wordpress.com/tag/matrix-games/
- The Matrix Game Construction Kit
  - https://paxsims.wordpress.com/magck/