Assassin's Mace (US Marine Corps)

Western Approaches Tactical Unit (Royal Navy)

Serious Game Approaches

Topics

- Balancing fidelity and playability in game design

- Design choices
  - Rigid vs free adjudication
  - Turn-based vs continuous
  - Player actions
  - In-person vs distributed
  - Manual vs digital

- Representing
  - time and space
  - metrics
  - imperfect information
  - incorporating uncertainty

- Easy-to-design/run games
  - seminar games
  - matrix games

Balancing fidelity and playability

▶ Making a game too accurate (with rich detail and complex causalities) can render a game unplayable

▶ Making a game too playable (via abstraction and simplified mechanics) can make a game unfit for purpose

▶ Getting the balance right depends on your objective and players.
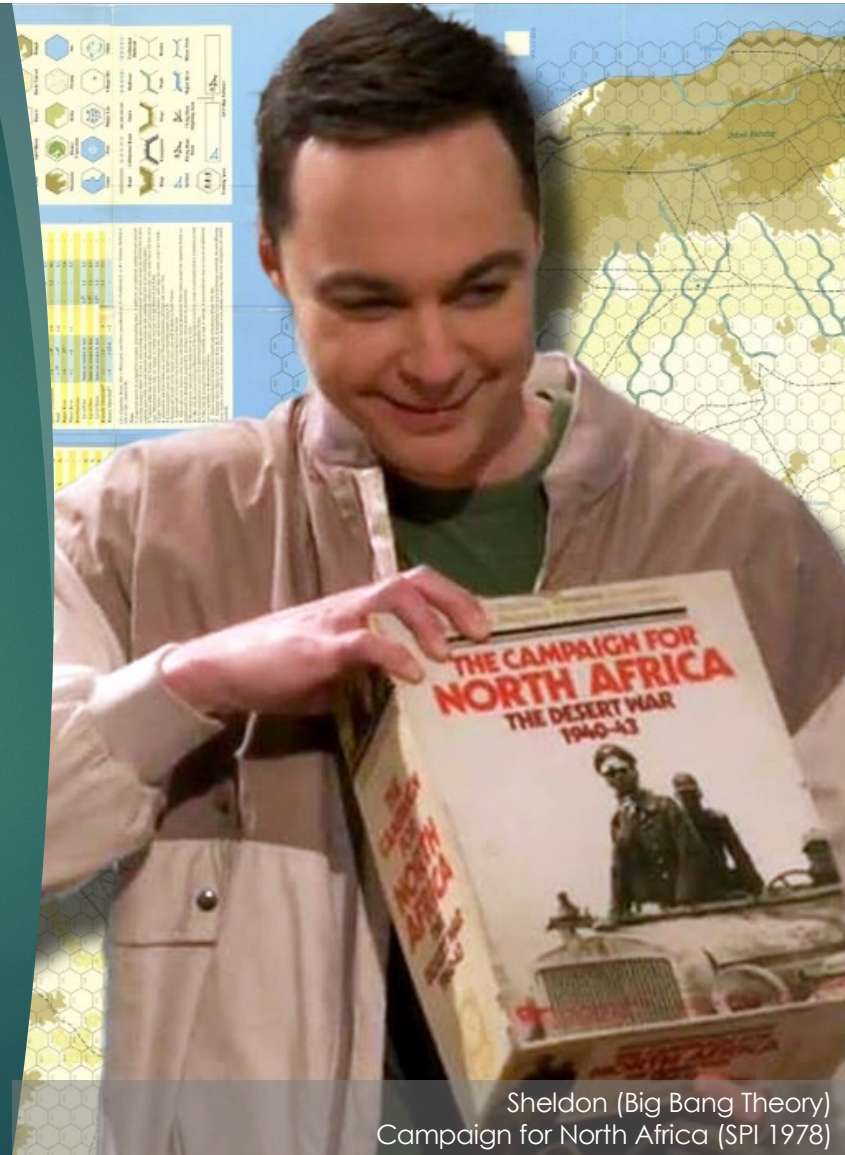
Sheldon (Big Bang Theory)
Campaign for North Africa (SPI 1978)

Rigid vs free adjudication

Matrix games replace umpire adjudication with structured discussion and aggregation of player assessments.

Rigid adjudication uses prewritten rules (or digital algorithms) to determine outcomes.

- Works best with known causalities and relationships.
- More scope for incorporating operational research data.
- Players are limited by the imagination of the rule-writer (or software coder).

Free adjudication uses umpires to decide outcomes on a case-by-case basis.

- Works best with poorly bounded, highly contextual causalities and relationships.
- More scope for player innovation.
- Subject to idiosyncratic effects (umpire bias).

Adjudication can involve a mix of both approaches.

Rigid vs free adjudication

Georg Heinrich Rudolf Johann von Reisswitz (1824)

Julius von Verdy du Vernois (1876)

Game turns

- Player actions can be turn-based
    - Players can take their turns in known sequence (IGOUGO)
    - Players can take their turns in unknown sequence (chit-draw)
    - Players can take their turns simultaneously
- Player actions can be continuous
    - places greater emphasis on OODA loop/speed of decision-making
    - adjudication and interaction challenges

Many boardgames (Monopoly) and wargames.

Some manual wargames.

Most seminar games.

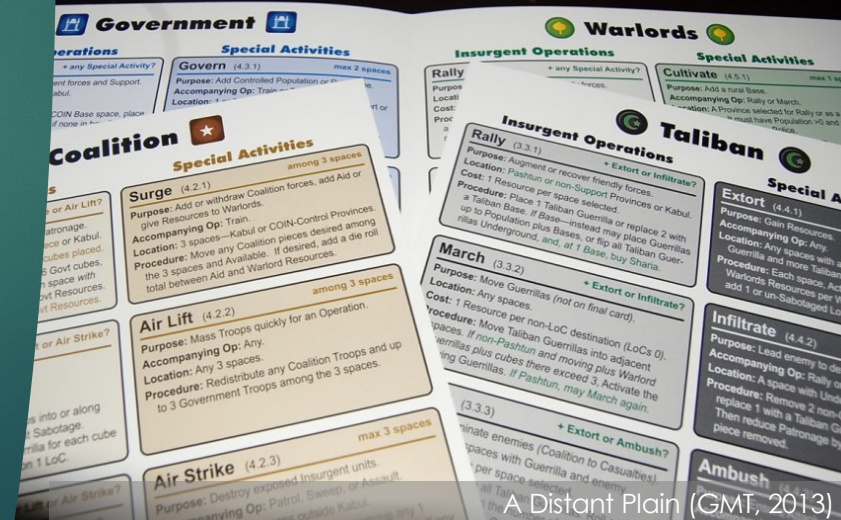Many digital games (VBS, Command: PE, etc.)

Mixed approaches are possible.

Player actions

▶ How to players take actions?

  ▶ describe your actions (narrative)

  ▶ select X actions from a menu of Y options

    ▶ play cards from a hand

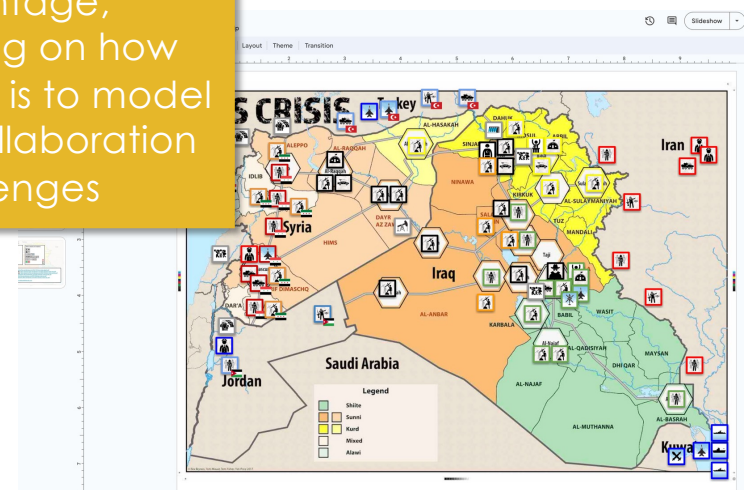 ▶ every asset can do something

STRIKE (Dstl, 2018)

A Distant Plain (GMT, 2013)

Distributed gaming

- Distributed (remote) gaming may be via dedicated platform, or—with some types of games—via readily-available software.
    - voice/video/text chat: Teams, WebEx, Zoom, Discord
    - collaboration space: whiteboards (Miro, etc.), Google slides
    - email
- Issues
    - Designed-for-remote play vs adapted-for-remote play
        - synchronous or asynchronous?
    - Security considerations
    - Player communication and team collaboration may be slower and less effective in distributed games

This may be a disadvantage OR an advantage, depending on how important it is to model C3land collaboration challenges

Manual vs digital gaming

	digital	manual
strengths	• interface, ease of use • speed • internal (rigid) adjudication • complexity (simulators) • multiple users, distributed game play • data collection • looks great!	• cheap and easy to make and modify • players can understand game models and relationships • improved human interaction
weaknesses	• **development time** • **development cost** • **black-boxing** • **difficult to revise/adapt** • beguiling effects of virtual reality	• **less able to manage complexity** • **harder to learn rules** • **harder to embed feedback mechanisms** • "cheap" and "old fashioned"

Representing time and space

- ▶ Strict versus vague or variable time-scale.

- ▶ Maps

  - ▶ grids

  - ▶ hexes

  - ▶ area movement

  - ▶ free movement

  - ▶ hybrid

  - ▶ boxes

  - ▶ do you need one?

Having a map, and what kind of map you have, can have significant effects on game play.

Metrics

- What variables do you need to track during the game?
  - supply
  - damage/attrition
  - resources
  - morale
  - attitudes/support
  - etc.
- How do you track this?
  - marker track
  - bits

Information

- How much information do players have, how extensive is it, how accurate is it, how do they get it?
  - "god's eye" games
  - umpired/digital double-blind(three map) games
  - modelling fog of war in other ways

Fog of war (or politics) makes a game "more realistic" but may make it harder to learn from.

Uncertainty

Not all games require this.

Some professional audiences dislike (and misunderstand) dice.

- representing the "known and unknown unknowns" through stochastic processes
  - dice
  - card-draw
  - random number generation

Seminar games

1. Multiple players/teams
2. Teams are given a briefing on their actor/role
3. Teams are presented with scenario
   ▶ Possible additional injects
4. Teams decide on response
   ▶ Teams might interact
5. Control team collects responses, adjudicates interactions and effects, and updates scenario
6. Teams presented with updated scenario and next turn begins

Seminar games can involve many players and be played over an extended period of time. They can also be adapted for distributed play.

Players are usually comfortable with the seminar format and often don't need to know detailed rules.

Scenario and briefings relatively easy to develop.

Often limited number of turns/adversarial interaction, no modelling of "OODA loop."

CLADE X OUTBREAK CONFIRMED

EXCOMM Meeting #2
June 1, 2018
Six weeks after onset of the first illness

Clade X pandemic seminar game, Johns Hopkins University (2018).

Matrix games

1. Optimized for 4-6 players/teams.

2. Teams are given a briefing on their actor/role and scenario.

   ▶ The current situation is visually depicted with maps and marker tracks.

3. Each team in turn declares an ACTION. Arguments PRO and CON are made.

   ▶ Probability of success is determined based on player arguments, and the action resolved.

4. Next player turn.

Matrix games can be designed relatively quickly, with simple components, and run in 3 hours or so.

Reckoning of Vultures (PAXsims, 2017)

High playability, lower accuracy/detail.

"One action per turn" limitation.

ISIS Crisis (PAXsims, 2014-17)