

The Way of the Wargamer

CASL Lecture on Strategic Gaming

4 April 2012

Sequence of play

- **Wargaming: what it is and what it isn't**
- **Why wargaming is important**
- **Dimensions of design**
- **Soapbox: the Cycle of Research**

Wargaming

- **Bad definition:** Any type of modeling, including exercises, campaign analysis, computer simulation without players (CSWP)
- **My definition**
A warfare model or simulation **that does not involve the operations of actual forces**, and in which the flow of events shapes and is shaped by decisions made by a human player or players

Analysis

- Analysis is
 - A scientific method of providing decision makers with a quantitative basis for decisions
- Key words
 - Scientific
 - Quantitative

Wargaming is NOT analysis

- Key words for analysis
 - Scientific
 - Quantitative
- *Key words for wargaming*
 - *Decisions*
 - *Players*

. . . and players are people

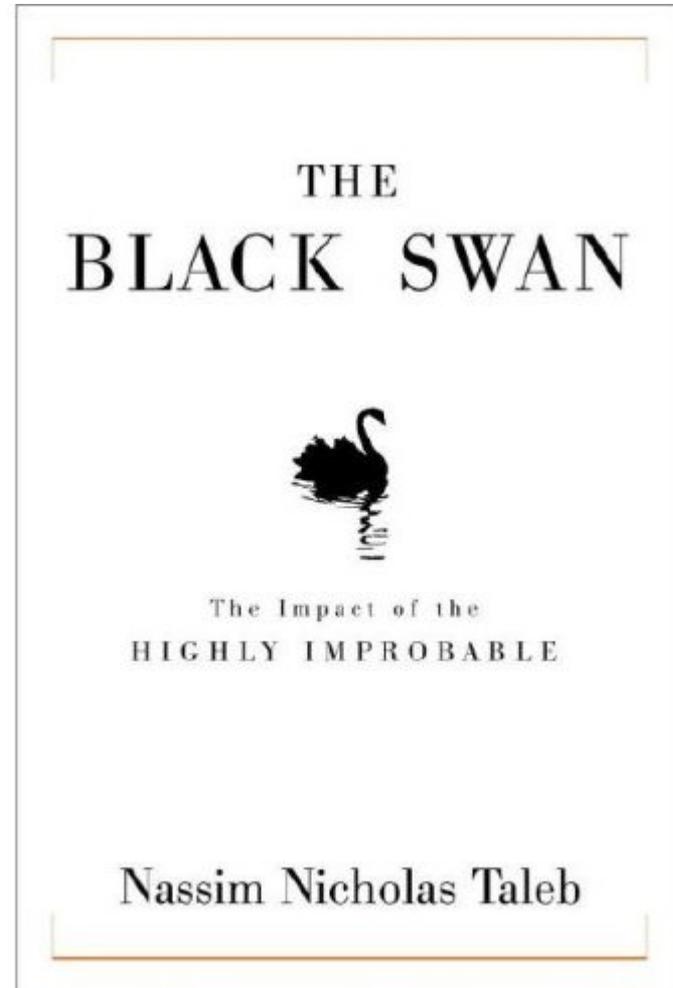


Wargaming is not . . .

- Analysis
- Real
- Duplicable
- Universally applicable

But it may be our best hope

- . . . to prepare for “Black Swans”
- Before they bite us!



Black Swan

- Highly improbable event that is:
 - Unpredictable
 - Carries massive impact
 - Something we tell ourselves stories about after the fact so that we can convince ourselves it was less random and more predictable than it really was
- Surviving—much less profiting from—them requires preparation, not prediction

The trick is . . .

- Know what you know
- Know what you don't know
- Learn what you don't know you know
- Learn what you don't know you don't know
- *This is where wargames will help!*

Sequence of play

- Wargaming: what it is and what it isn't
- Why wargaming is important
- **Dimensions of design**
- **Soapbox: the Cycle of Research**

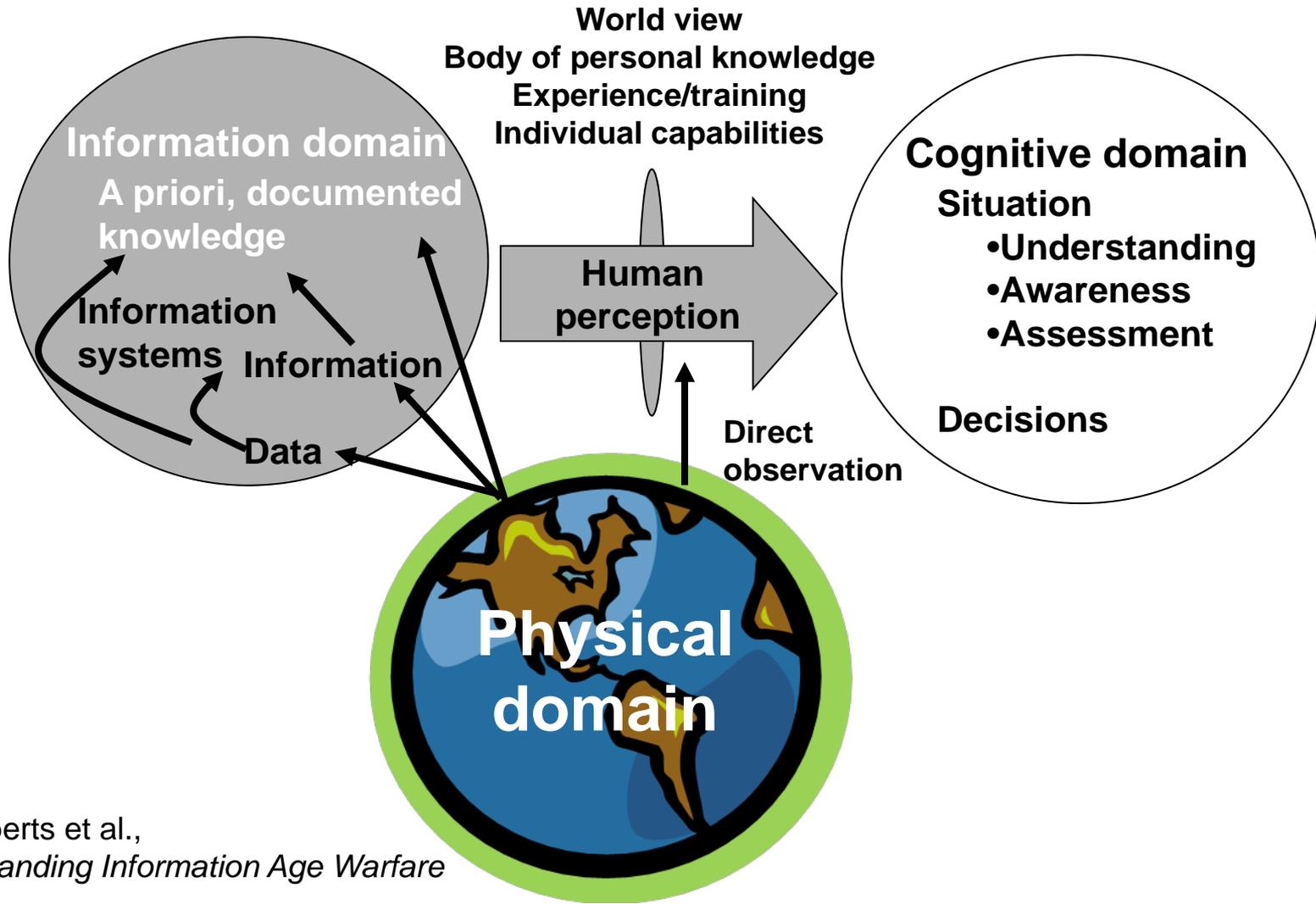
Elements of a wargame

- **Objectives**
- **Scenario**
- **Database**
- **Models**
- **Rules**
- **Players (and their decisions)**
- **And analysts! (to make sense of it all)**

Elements of game design

- **T**ime
- **R**elationships
- **E**ntities
- **A**ctivities
- **D**ynamics
- **S**pace

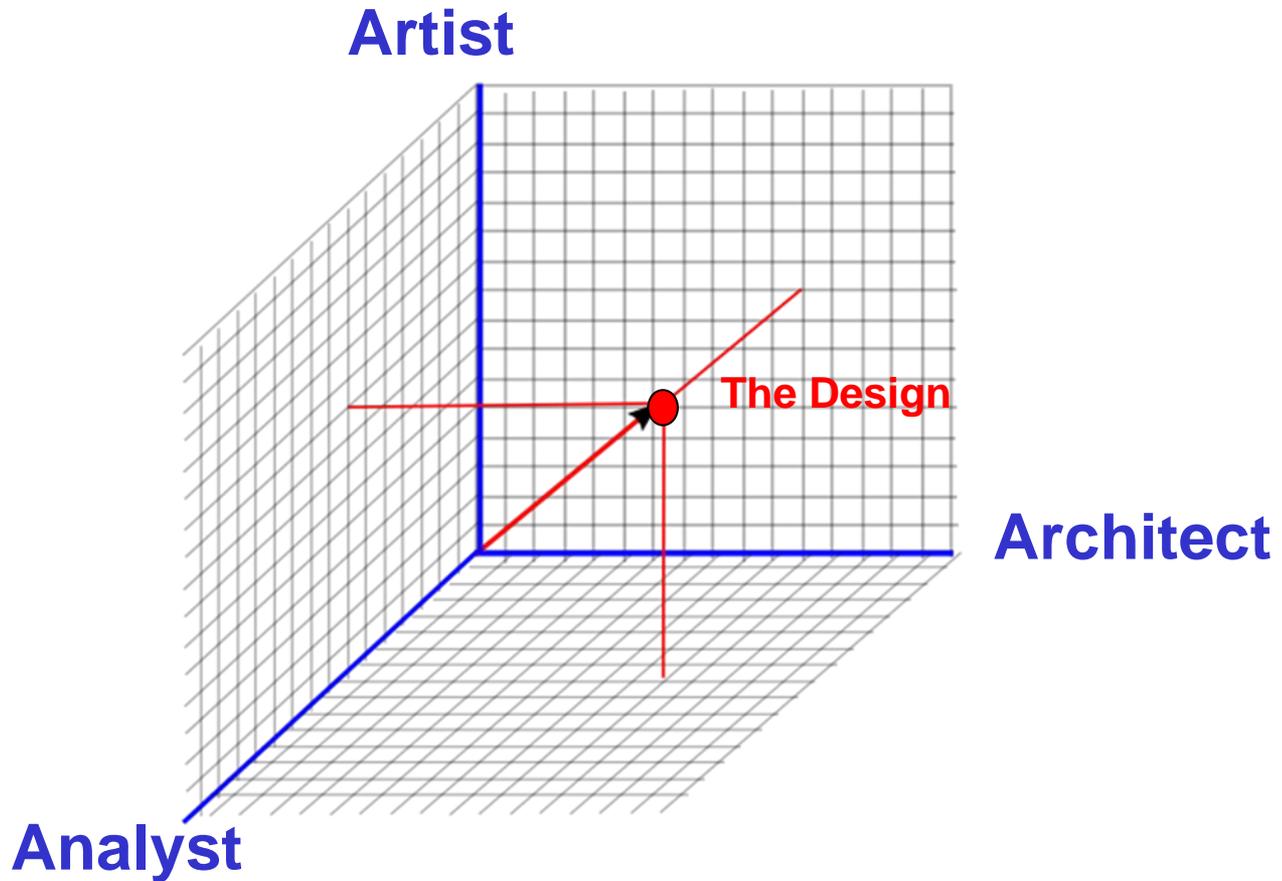
Domains of real war



Design: three approaches

- *The Analyst* focuses on modeling the real world, including the players as elements of the model.
- *The Artist* focuses on immersing players in a story that they become part of, engaging them intellectually and emotionally.
- *The Architect* focuses on distilling a simplified decisionmaking environment to challenge players with key decisions.

Design: three dimensions

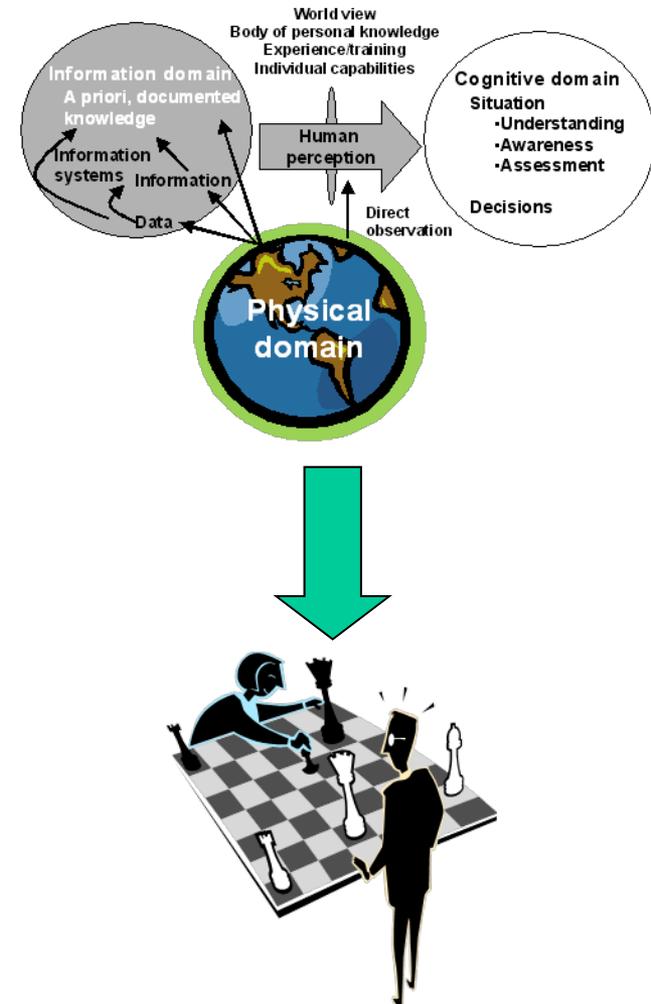


Graphic from <http://www.euclideanspace.com/maths/geometry/space/coordinates/index.htm>

Wargame design—*The Analyst*

The Analyst designs wargames to simulate real domains in the game's context using analytical models

Judged by "*Realism*"—how well game *models* reflect real-world effects, presuming that player *decisions* will somehow reflect *decisions* real-world commanders might make



The Analyst: example

BLUE PLAYER:
Co CDR TEOs (WSMR)

Task 1: Ambush
Task 2: Patrol (Dismounted)
Task 3: KLE
Task 4: Cordon and Search
Task 5: Raid
Task 6: Vehicle Checkpoint
Task 7: Provide Security

BN CDR TEOs (WSMR)

Task 1: DENT/VET/MEDCAP
Task 2: KLE

Logistics TEOs (LEE)

Task 1: Sustainment Ops for CF/HN
Task 2: Sustainment Ops for Civilians

CA PLAYER TEOs (WSMR)

Task 1: TBD

GREEN PLAYER 1:

BLUE BN CDR SIDE GROUP:
HN Government TEOs (MRO)

Task 1: TBD
Task 2: TBD

HN Army TEOs (FLVN/WSMR)

Task 1: Ambush
Task 2: Patrol (Dismounted)
Task 3: KLE
Task 4: Cordon and Search
Task 5: Raid
Task 6: Vehicle Checkpoint
Task 7: Provide Security

(DOS/USAID) PLAYER:

BLUE BN CDR SIDE GROUP:
DOS/USAID TEOs (MRO)

Task 1: TBD
Task 2: TBD
Task 3: TBD

PRT (NGO) TEOs (MRO)

Task 1: TBD
Task 2: TBD
Task 3: TBD

GREEN PLAYER 2: (TRISA)

HN Police TEOs

Task 1: Vehicle Checkpoint
Task 2: Vehicle Checkpoint (Corrupt)
Task 3: Provide Security
Task 4: Provide Security (Corrupt)

RED PLAYER 1: (TRISA)
Cadre and Local Fighter TEOs
Priority 1:

Task 1: Leader Interaction
Task 2: Traffic Control Point
Task 3: Recruitment
Task 4: Face-to-Face Coercion
Task 5: Non-Face-to-Face Coercion
Task 6: Targeted Assassination
Task 7: IED (Suicide Bomber)
Task 8: IED (Vehicle Born: Non-Suicide)
Task 9: IED (Command Wire)
Task 10: IED (Radio Controlled)
Task 11: IED (Victim Operated)
Task 12: Kidnapping
Task 13: SAF Attack
Task 14: IDF Attack
Task 15: Demonstration
Task 16: Move Asset
Task 17: Provide Security

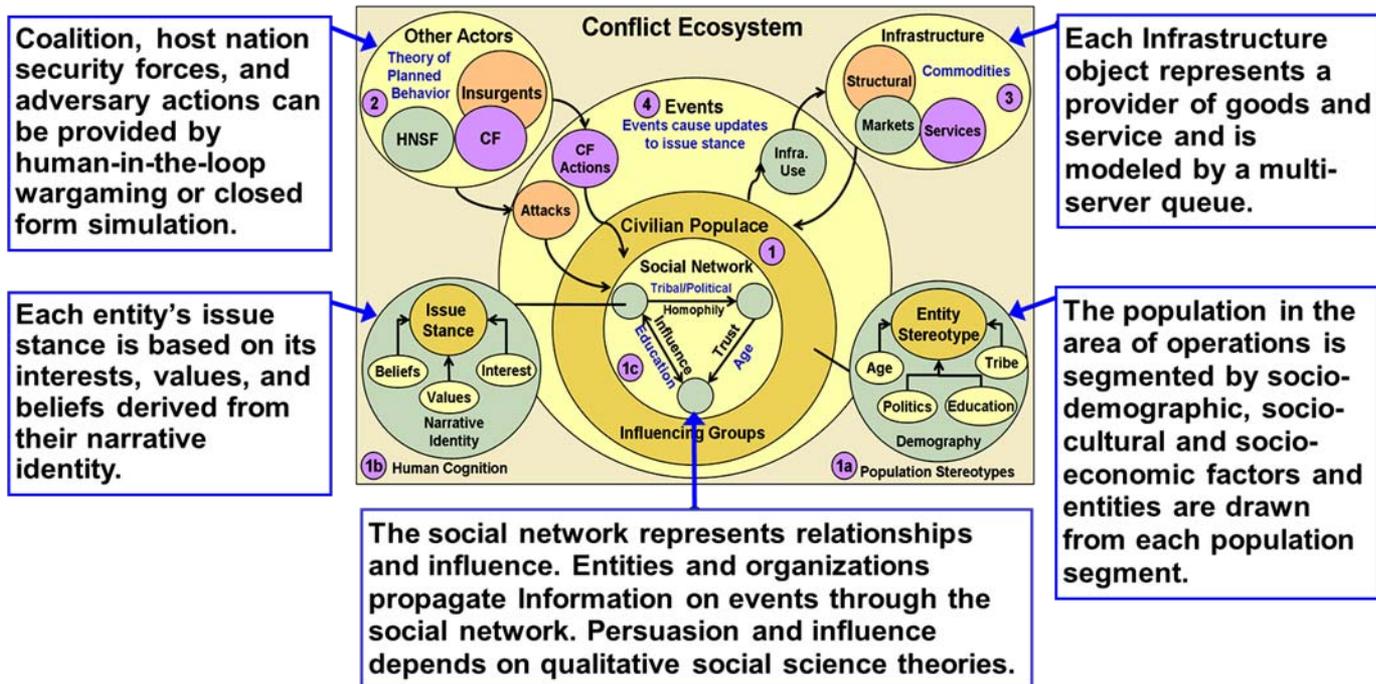
RED PLAYER 2: (TRISA)
Criminal TEOs

Task 1: Opium Production Point Relocation
Task 2: Kidnapping
Task 3: Vehicle Checkpoint

The Analyst: example

Cultural Geography (CG) Model

The CG model is an agent-based simulation of the operational environment based on doctrine and social theory focusing on the population's evolving stance on issues and related behaviors.



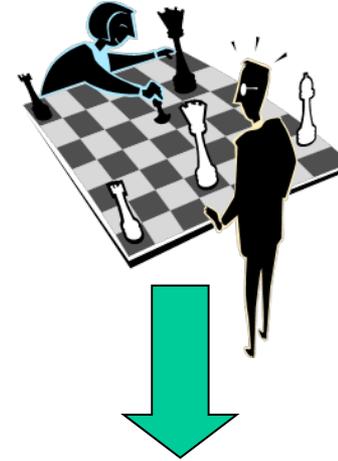
Beyond simulation

- Simulations and “simulation games”
 - The forte of the Analyst-designer
 - Assume we know more than we do about warfare
- Two alternative design approaches free wargamers from analytical leg-irons: *the Artist* and *the Architect*

Wargame design—*The Artist*

The Artist designs wargames to stimulate players to experience the story of the game from the Artist's point of view

Judged by *engagement*—how well player's *emotions* are stimulated to reflect how they would feel in a real situation

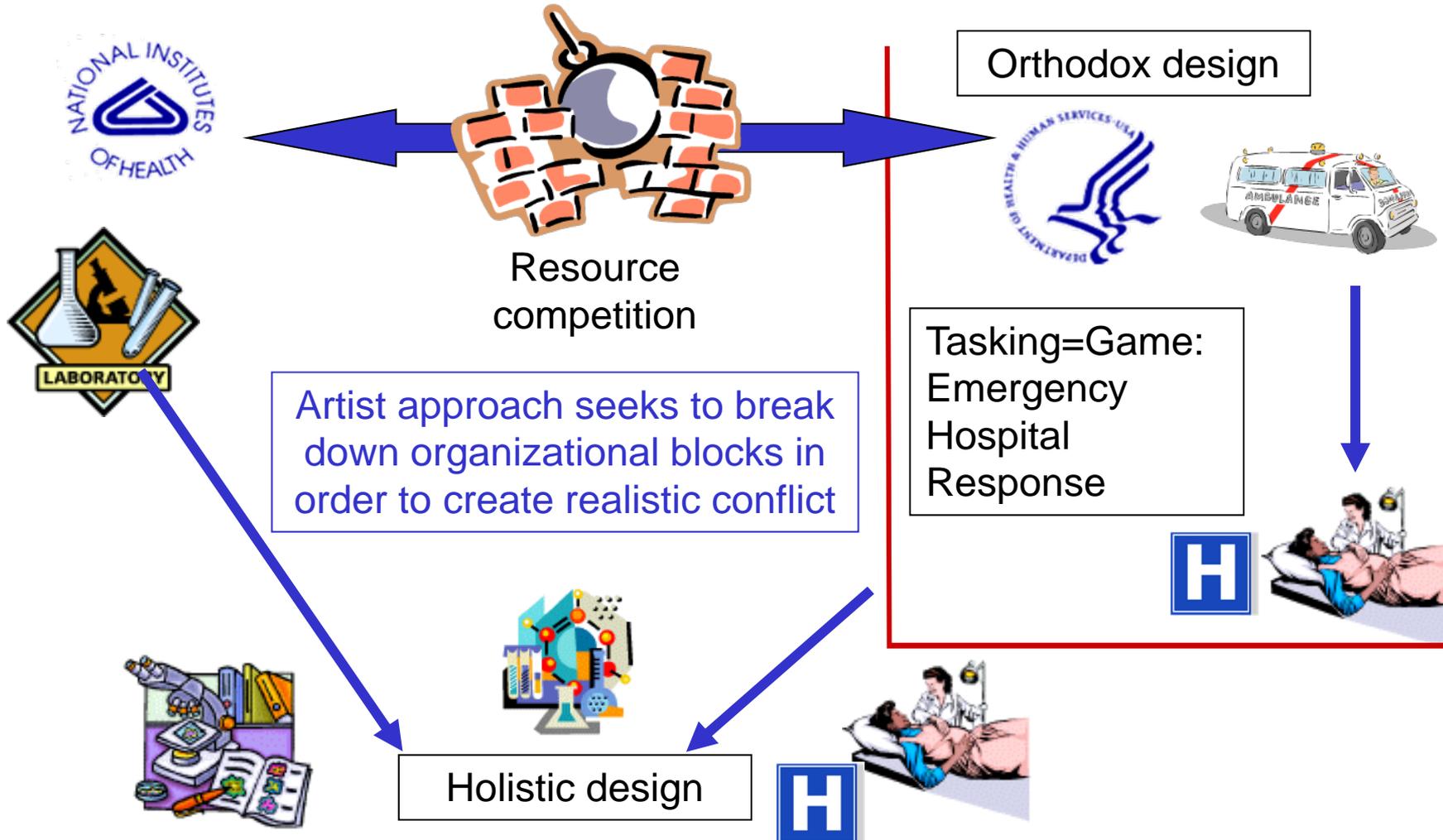


The Artist

- Focuses on human and organizational relationships
- Seeks to stimulate thought about conflicts within the player teams, as well as between them
- Designer “Point of View” based on organizational analysis of the *issues* the players need to work through

The Artist: example

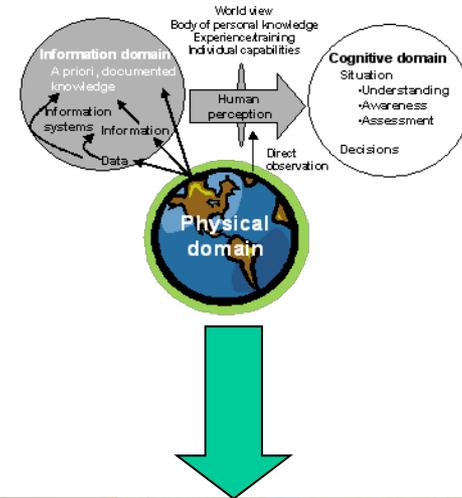
Note: this is a fictional example



Wargame design—*The Architect*

The Architect designs wargames to distill the real world into a tighter story focused on player *decisions*

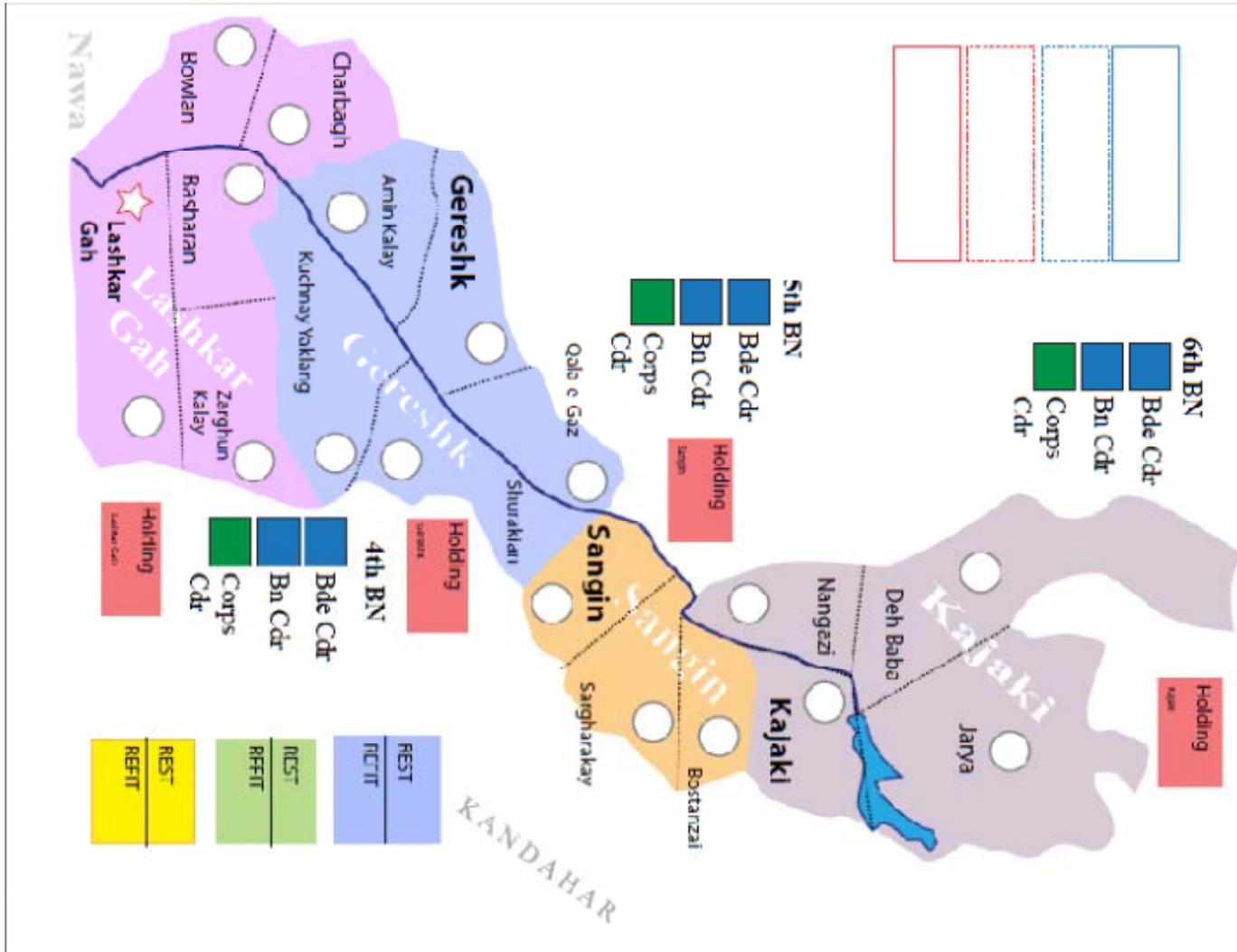
Judged by *focus*—how well player *decision points* reflect choices and alternatives real-world decision-makers might face



The Architect

- Focuses on organizational and institutional processes, and on key decisions players must confront
- Distills the results of analysis into those key decision points
- Designer “Point of View” embodied in the representation of the *environment* players must live in, not specific issues they must address

The Architect: example



The Architect: example

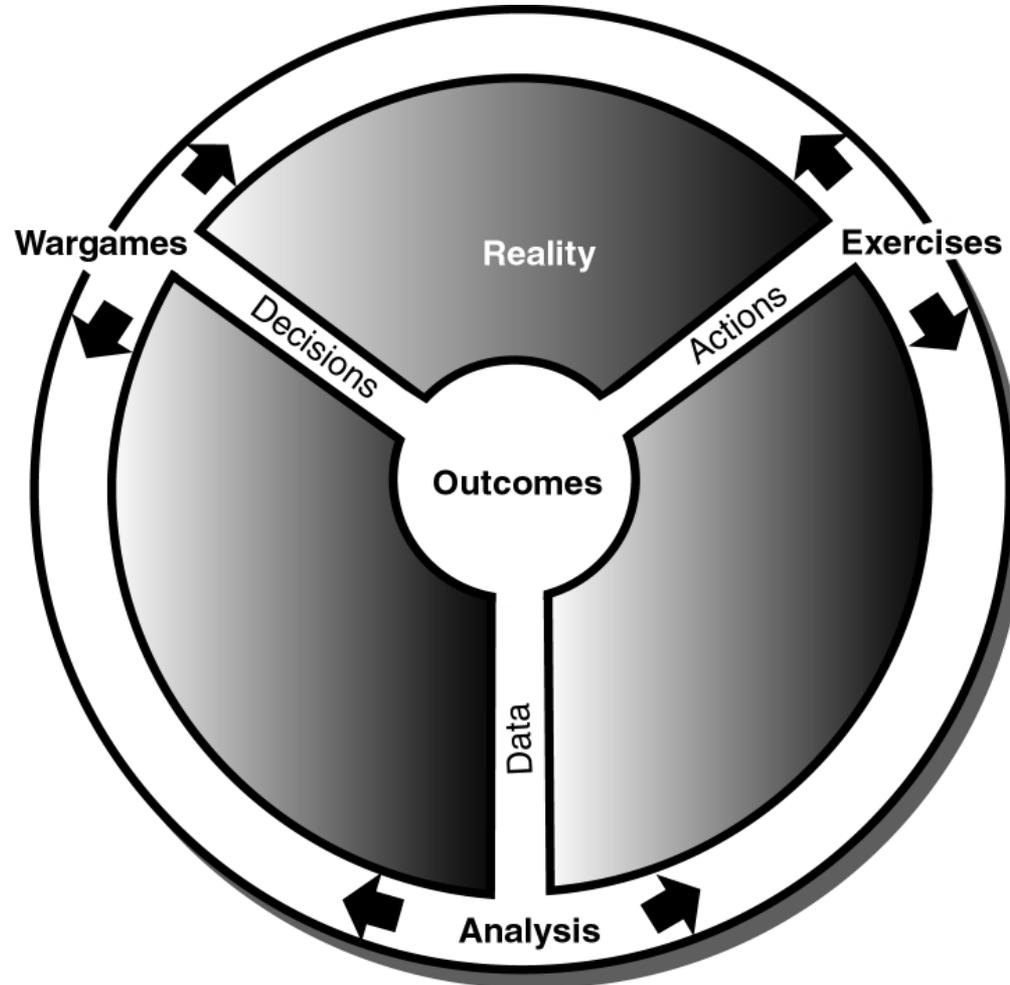
<p>Sangin</p> <p>Key Leaders</p> <table border="1"> <tr><td></td><td></td><td></td></tr> </table>																															<p>Infrastructure Tracks</p> <p>Agriculture</p> <p>Supply Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Grain Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Poppy Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Electricity</p> <p>Distribution Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Generation Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Transmission Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Legal</p> <p>Enforcement Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Judicial Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Medical</p> <p> Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p>	<p>Kajaki</p> <p>Key Leaders</p> <table border="1"> <tr><td></td><td></td><td></td></tr> </table>																															<p>Infrastructure Tracks</p> <p>Agriculture</p> <p>Supply Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Grain Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Poppy Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Electricity</p> <p>Distribution Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Generation Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Transmission Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Medical</p> <p> Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p>
<p>Lashkar Gah</p> <p>Key Leaders</p> <table border="1"> <tr><td></td><td></td><td></td></tr> </table>																															<p>Infrastructure Tracks</p> <p>Agriculture</p> <p>Supply Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Grain Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Poppy Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Animal Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Electricity</p> <p>Distribution Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Generation Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Transmission Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Legal</p> <p>Enforcement Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Judicial Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Water Treatment</p> <p> Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Medical</p> <p> Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p>	<p>Gereshk</p> <p>Key Leaders</p> <table border="1"> <tr><td></td><td></td><td></td></tr> </table>																															<p>Infrastructure Tracks</p> <p>Agriculture</p> <p>Supply Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Grain Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Poppy Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Electricity</p> <p>Distribution Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Generation Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Transmission Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Legal</p> <p>Enforcement Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Judicial Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p> <p>Medical</p> <p> Health: 10 20 30 40 50 60 70 80 90 100 Capacity: 10 20 30 40 50 60 70 80 90 100</p>

WARNING!

- Look out, Perla is on his soapbox again!



The cycle of research



The revolution cometh?

- *Analyst* wargames are butting up against their limits in representing GWOT and asymmetric warfare
- 21st Century wargaming in DoD needs revolutionary new directions from the design approaches of *Artists and Architects*