



Beyond PMESII: Advancing JIPOE for Integrated Campaigning

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****The views in this brief are the authors and do not reflect the view of NIU, the DOD and the USG.****

AGENDA

- Background
- JIPOE Review
- Developing Intuition
- Two Turning Movements
- Nation State Examples
- An Implication for Policy
- The Point
- JIPOE 2.0

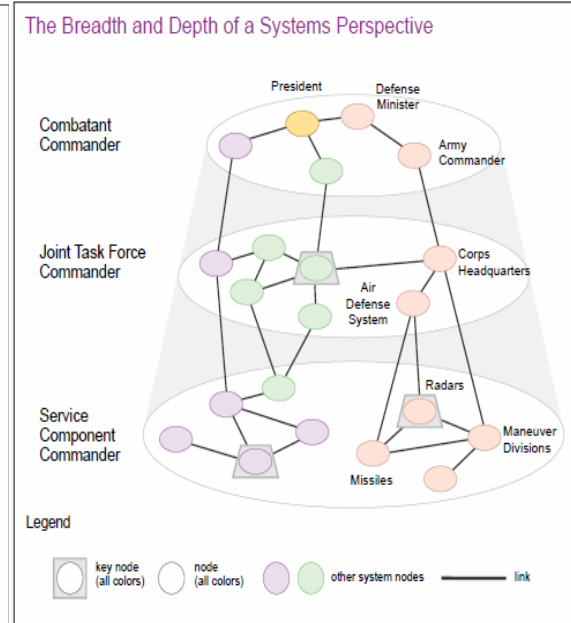
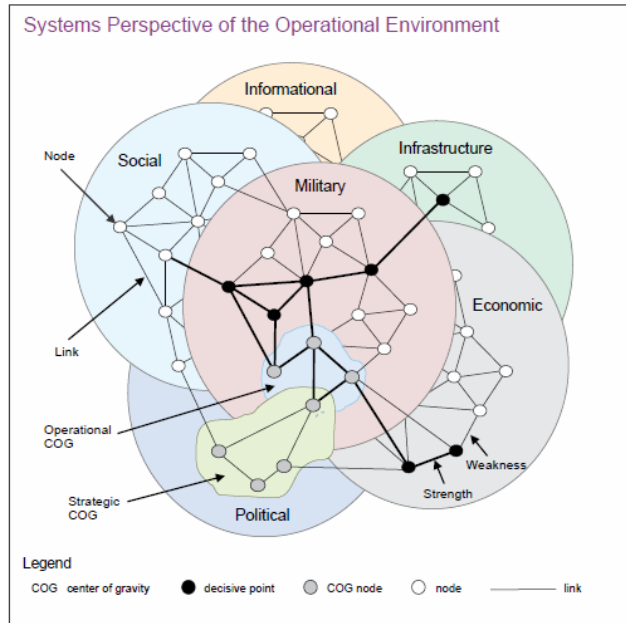
Background

Completed PhD in Computational Social Science (Complex Systems based program) at George Mason. Dissertation supported the SMA study *The Future of Global Competition and Conflict*.

Main Points:

1. The theoretic foundation (e.g. complex adaptive systems, complex systems, systems theory, complexity) of Joint Doctrine is strong.
2. **The application of complex systems through JIPOE can be improved by changing from a categorical description to a discussion of the interdependencies within the operating environment.**
3. Uniqueness is a key feature of complex systems, this means centrally derived solutions can support but NEVER replace local leaders.
4. Computation is a critical tool necessary to analyze complex systems and its use must be expanded across the force.

JIPOE REVIEW



Joint Intelligence Preparation of the Operational Environment

Step 1

Define the operational environment.

Step 2

Describe the impact of the operational environment.

Step 3

Evaluate the adversary and other relevant actors.

Step 4

Determine adversary and other relevant actor courses of action.

- A systematic methodology used by intelligence personnel.
- Used to analyze information about the operational environment and the adversary.
- A key tool for conducting joint intelligence analysis.
- Can be applied to the full range of military operations.
- Identifies courses of action by probability.

(Joint Intelligence Preparation of the Operating Environment 2014)

Developing Intuition

Categorical:*

Bird	Beak	Color
1 (Geospiza m.)	Large	Dark
4 (Certhidea o.)	Small	Bright

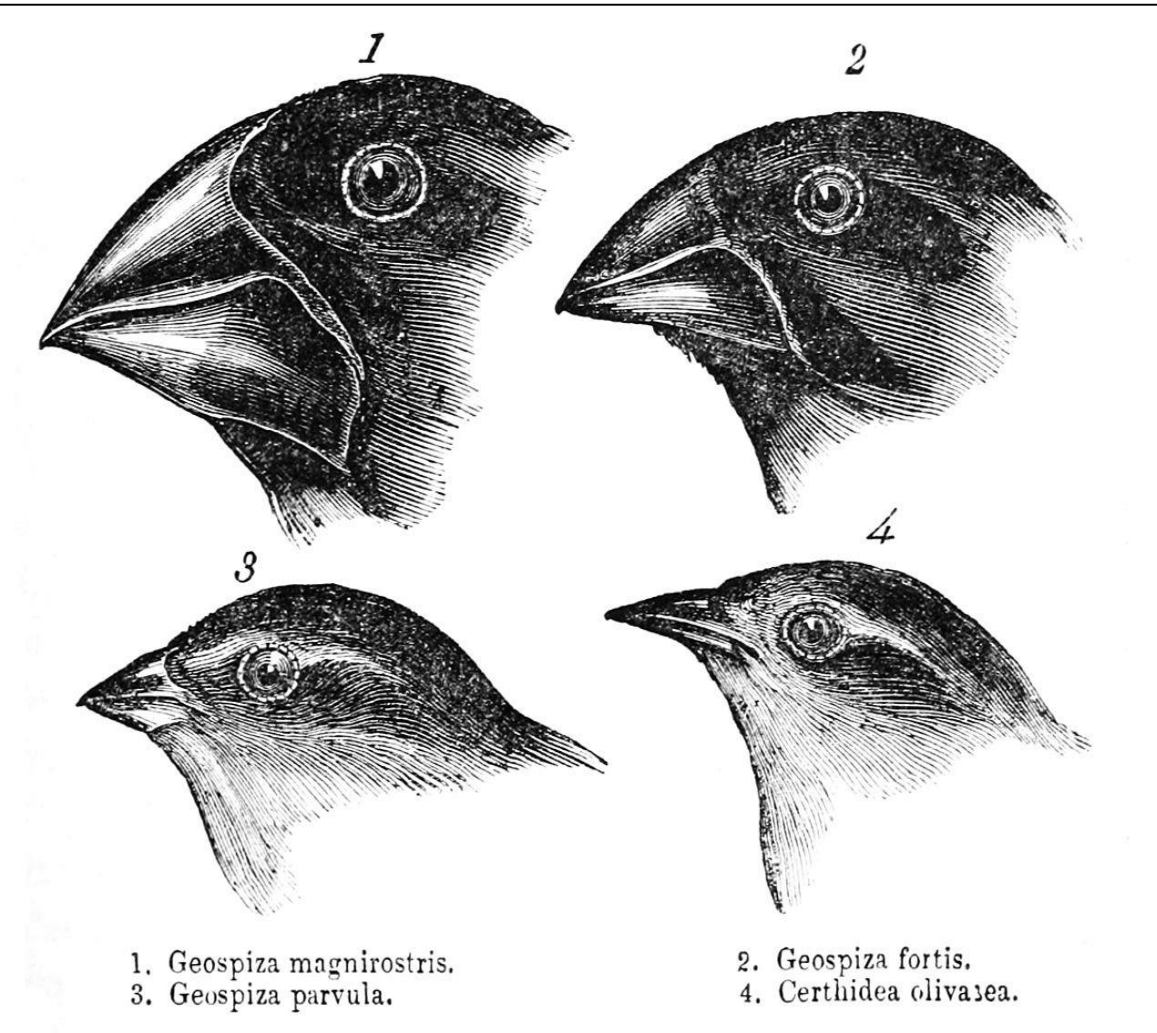
Interdependent:*

-Bird 1 has a large bill which allows it to open and eat bugs at the base of local cacti and its color allows it blend in with ground cover.

-Bird 4 has a narrow, pointed bill to avoid thorns and eat cacti fruit while blending in with local plants

**Categories provide descriptions,
interdependencies provides insights****

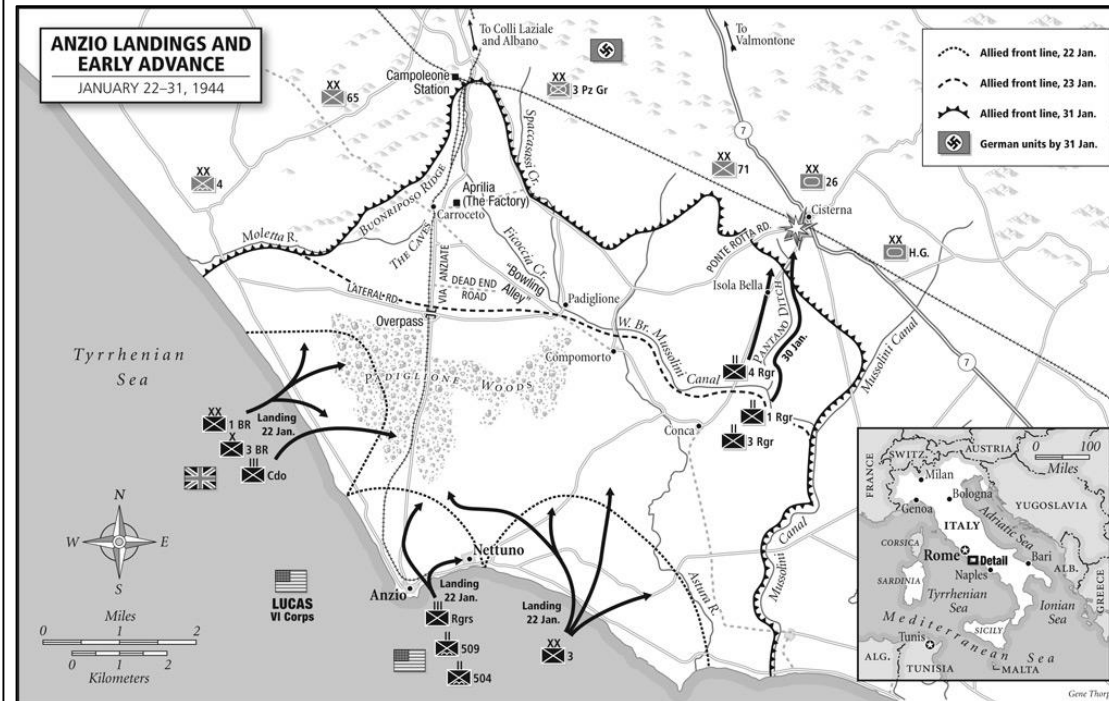
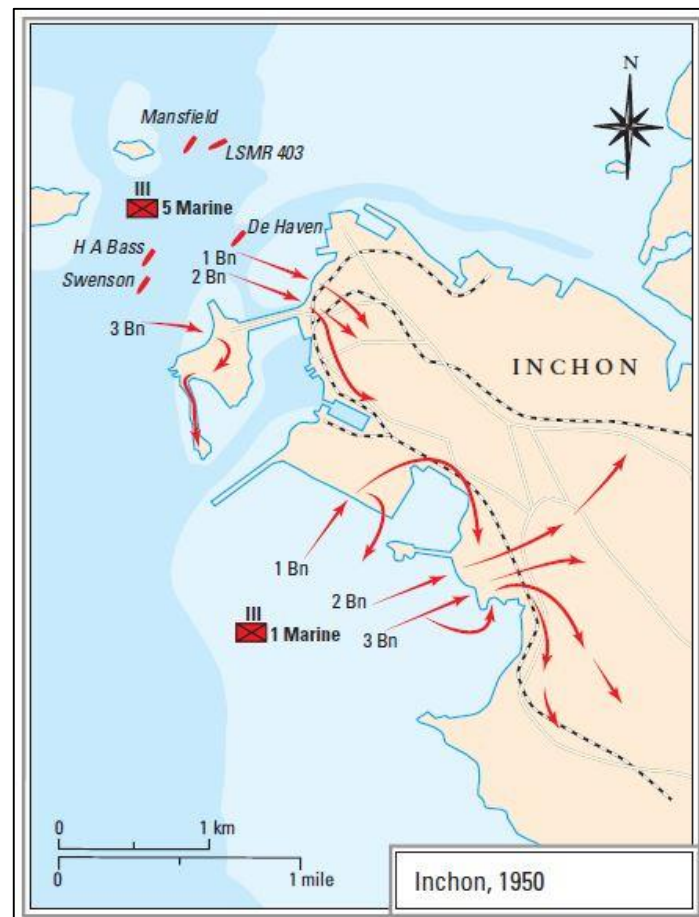
**Caution: Influencing the adaptive path of the system is difficult/ dangerous (e.g. Cane toads in Australia, Russia's Virtual Economy)



en.Wikipedia.org

*For demonstration purposes only

Two Turning Movements**



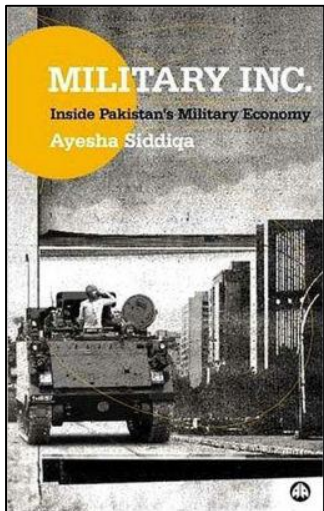
- Inchon led to Seoul which cut the North Korean supply lines (broke their interdependency).
- Anzio seized no interdependency and allowed the Wehrmacht to surround them in the low ground.

Omar Bradley: “[Inchon] was probably the worst possible place ever selected for an amphibious landing”

Nation State Examples

Relationships between Government and Military**

Change in Resource Flow to Government**



VS



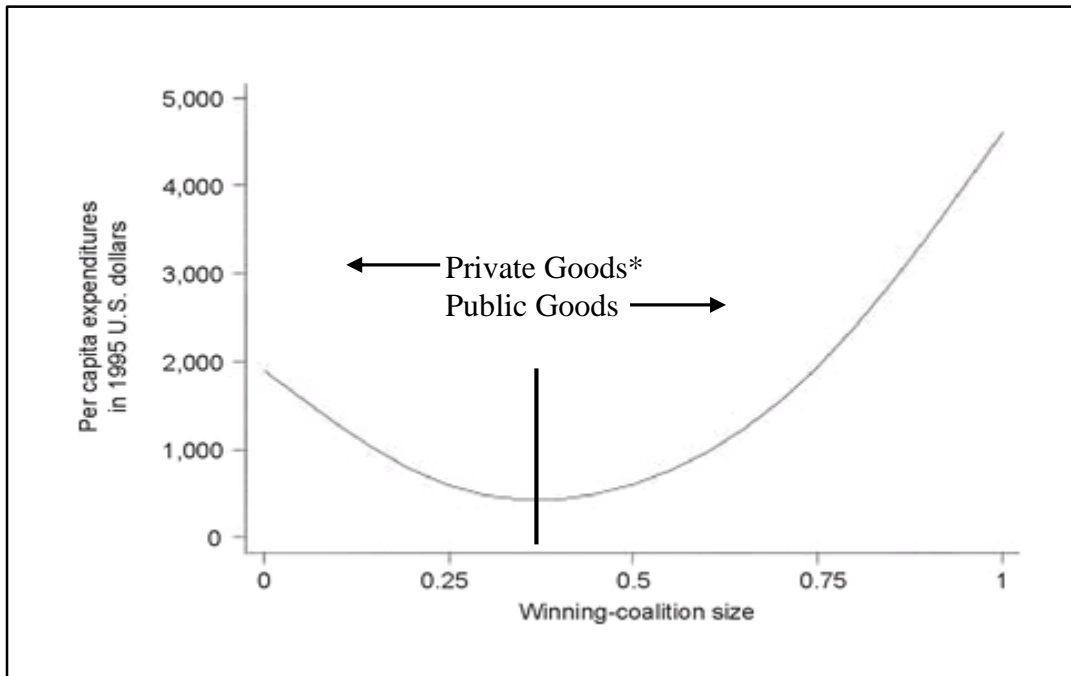
- Pakistani military has independent funding streams
- US military must have its funds authorized every 2 years by Congress

- Sparta was defeated by Thebes 33 years after beating Athens
- Internal political process led to its undoing after transitioning from a local to regional power
- Regional power allowed some Spartans to get very rich preventing others from being citizens and destroying the core of Army

Interdependencies Influence System Behavior

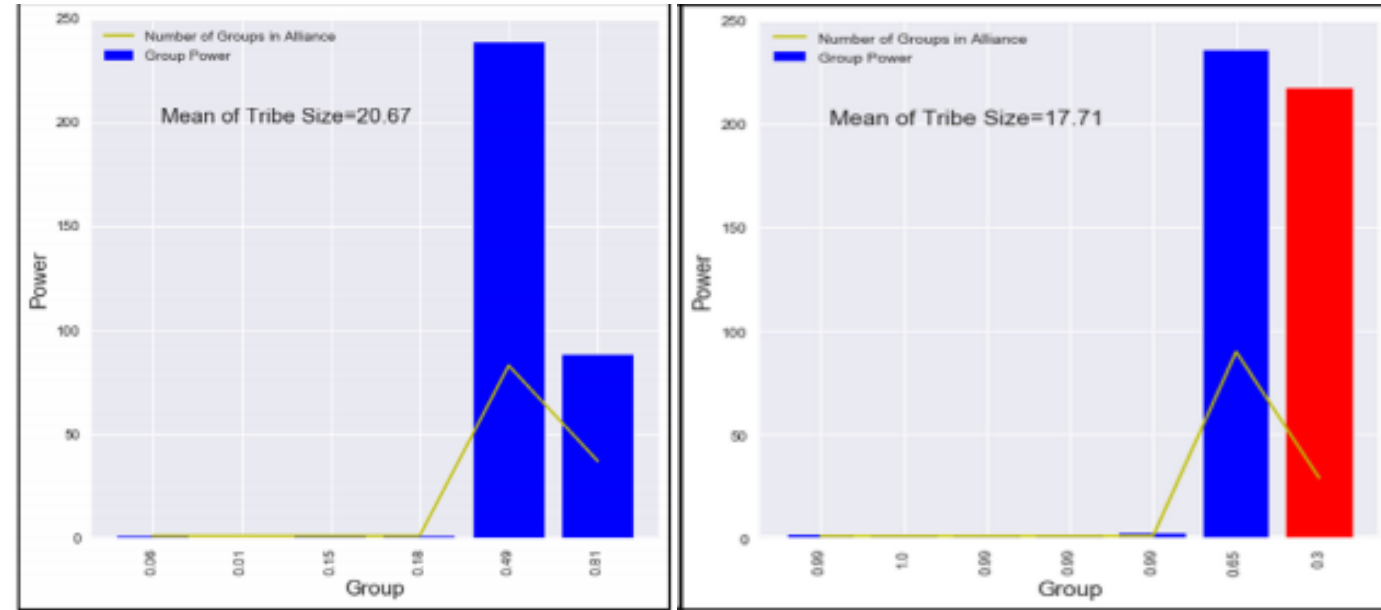
An Implication For Policy

Selectorate Theory:



The relative size of the winning coalition determines whether or not the government distributes public goods or private goods

Simulation**:



Experience**:

Well documented in Afghanistan Karzai coalition would threaten enemy with US power; provide “private goods”

The Implication: US strength can undermine its attempts to establish a democracy.

The Bottom Line

The joint force can improve the JIPOE process by (a) managing the analysis of relevant actor interdependencies to better understand links between behavioral trends and outcomes and (b) can do so more efficiently and rapidly through the expanded use Artificial intelligence and its collection of computational tools.

Takeaway 1: The US must understand the interdependencies it creates and alters within the foreign population.

- US support injects so many resources that it can reduce the winning coalition size and cause smaller more powerful minorities (creates governments who provide private goods)

(Previewing Part 2)

Takeaway 2: Complex systems requires the use of computation to explore and understand their dynamics

- How does the Joint Force and USG operationalize computation to leverage it in the Joint Planning Process as part of Integrated Campaigning?

Recommendations

JIPOE 2.0

Identify the groups within the system
Identify each group’s interdependencies (e.g. flows of resources)
Identify each group’s possible behaviors (e.g. policies, courses of action)
[With Simulation] Simulate the OE and validate the model behavior against observed behavior
[Without Simulation] Describe primary flows of resources causing behaviors and possible alternatives

- **Test:** Identify organizations to implement updated approach (voluntary?)
- **Coordinate:** Synchronize with mutually supporting efforts (e.g. JP HAMO)
- **Assess:** Refine and Improve;
- **Update:** JIPOE guide
- **With Simulation (next week)**
 - *Determine/test desired technical capability of joint force*
 - *Build the Infrastructure*

In Practice: USTRANSCOM; Ukraine

QUESTIONS