Wicked Problems and Comprehensive Thinking in Irregular Warfare

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1. Wicked Problems: Globalization and Messy Social Challenges

   • Complexity Theory
   • Living Systems Theory
   • Decision-making Theory

3. Bounding Complexity: Tools and PEOPLE

4. Conclusion: Comprehensive Thinking
1. The Wicked Problem: Globalization and Messy Social Challenges

- Peace
  - Peacekeeping
  - Persuasion
  - Dissuasion
  - Deterrence
  - Presence
  - Cooperation
  - Collaboration
  - Foreign Internal Defense
- Crisis Response
- War
- Post-Conflict
- Peace

- Humanitarian Assistance/
  - Disaster Relief
- Counterinsurgency
- Security Transition
- Economic/Political Stabilization
- Social Works

- Major Combat
- Peacemaking
  - Strike
  - Major Combat

- Law Enforcement
  - Police Operations
  - Sanctions Enforcement
  - Blockade
  - Evacuation
  - Counterterrorism
What does that mean?

- Increasing human dimension
- Increasing complexity
- Cross spectrum
- Increasing need for a comprehensive approach
Irregular Warfare?

- Not irregular, not necessarily warfare, not solely military

- Focus on the human dimension
  - Man, his organizations, and his actions are the Problem … and Solution
  - “Suasion” Operations
    - Victory = Changing perceptions

- Psychological vice Physical Attrition = new metrics

- Competition and conflict vice war and peace
  - Ongoing, ever-changing never ending interaction
  - Not friends or foes but actors
The Wicked Problem

▪ “Wicked” (Rittel and Webber)
  – Each problem unique and part of web of problems
  – Enumerable potential solutions; No right or wrong answer
  – No end state

▪ The “Social Mess” (Horne)
  – Man and social context as source of the “wicked” “mess”
  – Human actions inherently messy

▪ “Wicked” ➔ Complex
  – Not impossible; we deal with complex problems every day
2. Dealing with “Wickedness”:
Three Part Conceptual Framework

- **Complexity Theory**
  - Defines nature of challenge/ “wicked” problem
  - Define limits of what we can know and do

- **Living Systems Theory**
  - Provides real world working model for complex interactions

- **Decision Making Theory**
  - Dissects systems/ actions into discrete tasks and problems sets
Complexity Theory: What do we mean by “complex”?

- **Complicated**
  - Known/knowable, predictable cause and effect chain
  - Inputs/outputs proportional
  - Whole equals sum of parts

- **Complex**
  - Multiple interdependent variables
  - Changing cause and effect chain
  - Inputs and outputs not proportional; whole does not equal sum of the parts

- **Complex Adaptive System**
  - Reacts and evolves independently in ways we cannot entirely predict
Complexity: Interdependent Variables

Large numbers of interdependent variables shape the behavior of each actor but continually change
Complexity: Interdependent Variables
Complexity: Interdependent Variables
Complexity: Interdependent Variables

Each variable is two-directional affecting other actors…
Complexity: Interdependent Variables

… who in turn co-evolve and affect each other.
**Complexity**

- Key Characteristics and Mechanisms of complex systems become potential analytical tools
  - Tagging
  - Aggregation
  - Building Blocks
  - Internal Models

  \{ Pattern Analysis \}

  \{ Combined with Living Systems \}
Complexity: Tagging and Aggregation

**Tagging:** Identifying classes of variables – social, economic, cultural, demographic, military….  
**Aggregation:** Watching how these vary over time
Complexity: Tagging and Aggregation
Complexity: Tagging and Aggregation
Complexity: Tagging and Aggregation
Living Systems Theory

- **Living Systems Theory offers multi-layer system of complex adaptive systems**
  - Provides building blocks, internal models for the living CAS that define IW and CA world
  - Provides real world framework for the system of CAS that make up the IW/CA world

- **Systems are product of two types of evolution**
  - Biological: Darwinian natural selection, “survival of the fittest”
  - Sociological: Purposeful learning and adaptation by human CAS -- Traceable through history

- **Result:**
  - Can understand and trace why CAS succeed or fail
  - Can identify “essential processes” and capabilities needed to succeed
    - Building blocks common to all living systems
    - Identifiable in human systems at every level
Living Systems: The System of Complex Adaptive Living Systems

Based on James Grier Miller, Living Systems
Decision-making Theory: The “Rational Actor”- Context is Everything

- **Rationality**: “the latent power to make logical inferences and draw conclusions that enable one to understand the world about him and relate such knowledge to the attainment of ends.”
  - The *irrational* actor = random acts/ no limit/ no bounds
- “Rationality” is complex behavior only understood in context
  - Context: Social, cultural, religious, economic, political…
    - “where you sit” structural and organizational
    - Individual education, experience, training
  - Context changes / evolves
    - Context is snapshot of a moving target
    - Context is time dependent
Decision-making Theory: From Stimulus and Response to OODA Loops to…

… Action-Reaction Cycle

Context
(Social, Economic, Cultural, Political Structure, Organization, Education, Experience, Training)

Sense-making → Decision-making → Awareness Creation → Implementation

...
3. Tools and PEOPLE: Coping with Complexity

No Big Black Box but…

- Can bound the problem
  - Use what we know or can know to bound what we cannot know or know in time
    - Distinction between what is linear and can be decomposed and what is complex and cannot
    - Use former to bound the latter

- Can dissect the decision-cycle to assess who needs what tool/ expertise where and when
Essential Processes that all actors must undertake

... Action-Reaction Cycle

Context
(Social, Economic, Cultural, Political Structure, Organization, Education, Experience, Training)

Sense-making
Decision-making
Awareness Creation
Implementation
Decision-making

Exploring Options
- Objectives
  - Short Term
    - Problem
    - Level
    - Organization
  - Long Term
    - Problem
    - Level
    - Organization
- Capabilities Available
  - Organic
    - Independent
  - Non-organic
    - Potential Synergies
    - Accessible
- Potential Actions
  - Feasibility
    - Organic
    - Non-organic
  - Physical Impacts
    - Direct
    - Indirect
    - Cascades
  - Psychological Impacts
    - Local
    - Societal
    - International

Planning
- Choosing
  - Compare/Evaluate
    - Best Potential Actions
    - Probability of success
      - Timeliness
      - Flexibility
      - Robustness
    - Capability Availability
      - Organic
      - Non-Organic
      - Accessible
  - Choose
- Planning
  - Commit
    - Capabilities
      - By Problem
      - By Level
      - By Organization
  - Coordinate
    - Organic
    - Non-Organic
    - Effort-wide
  - Communicate
    - Direction/Guidance
Implementation

Contextualize

Situation at time of Implementation
- Physical
  - Predicted vs. actual situation
- Psychological
  - Local
  - Societal

Actual Actions
- Unplanned changes

Adapt

Evolving Problem
- Changing Variables
  - Asset availability

Coordinate Adaptation
- Organic
- Non-organic

Feedback

Actual vs. Planned Impact Observed
- Physical
- Psychological

Initial Reactions
- Local
- Societal
- International
- Effort-wide
Tools, PEOPLE… and the Real World: Scale, Timing & Perspective

- **Scale / Perspective:**
  - Decision-making not only by major “commanders”
    - Commanders at all levels from strategic corporal to President
    - Analysts, experts, liaison people
  - Each level aggregates all decision-making from lower levels and adds its own

- **Tyranny of Time:**
  - Decisions at all levels are function of time
    - Time windows for gathering information/knowledge, for assessing, acting, learning, adapting
  - Utility of analytical tools tied to time
  - Time forces trade-offs between tools and people
    - Shorter the time, greater the reliance on the individual and his education, experience, training
    - Shorter the time the less information, knowledge, analysis
Losing Perspective
Coordination over Time

Hierarchal Coordination

Peace
Crisis Response

Major Combat

Post-Conflict
Peace
The Other People Factor: Organization & Networking

- IW Ops are a complex “art”
  - Require internalized human understanding of complex problems

- Acquiring/communicating complex understanding is personnel challenge
  - Personnel Management tools
  - Organization
  - Social and communications networking
6. Conclusions

- Comprehensive Thinking mandated by interlocking complexity of 21st Century World
  - Irregular Warfare approach is the military instantiation
  - Complex human roles critical

- New tools for dealing with complexity revolve about synthesis of
  - Complexity Theory: Defines Problem and what we can do about it
  - Living Systems Theory: Defines Complex Real World Context
  - Decision-making Theory: Dissects Interactions into Specific Tasks/Problems for Tools and PEOPLE

The Great Paradox: **Complexity Simplifies!**
Objective: Not perfect answers but those timely and good enough to succeed ... and better than the competition’s
Questions