Decision & Analysis as a Disruptive Technology

Seeing and Acting Beyond the "Horizon"

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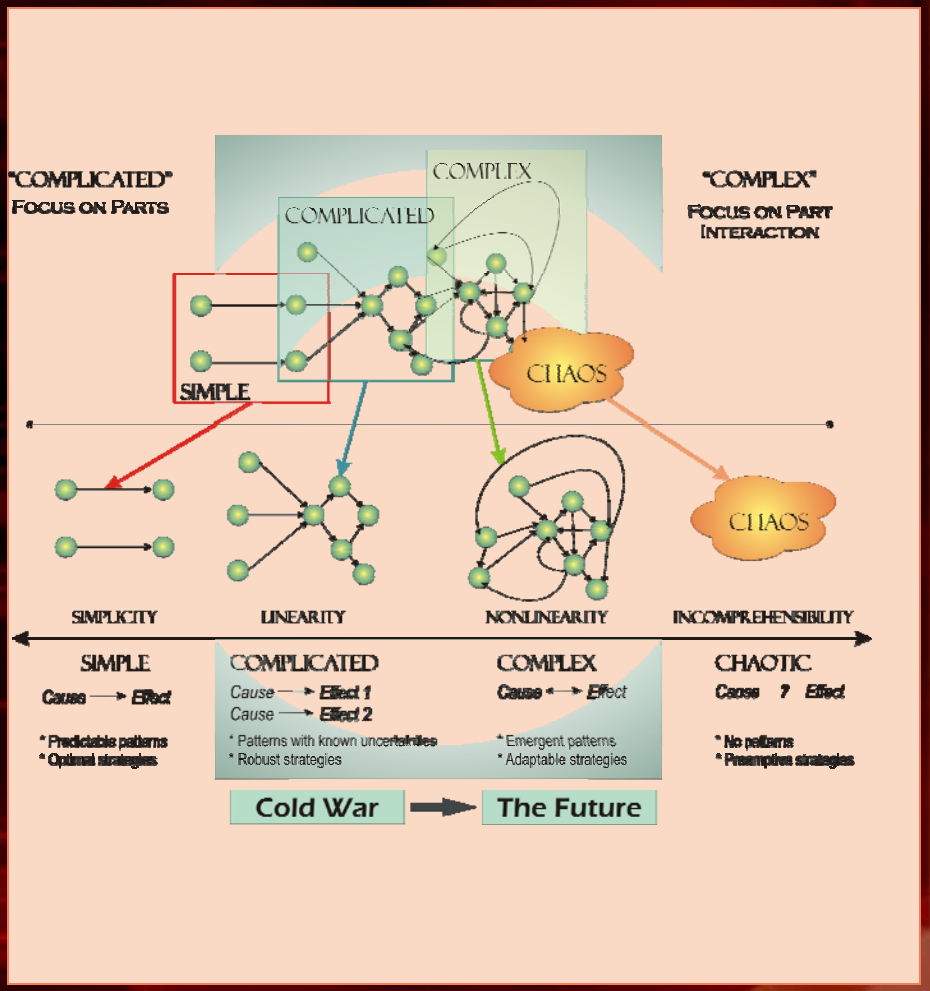
Disruptive Innovation

Disruptive Innovation … intentional or strategic employment of radical, novel or emerging approaches in a fashion that results in fundamental changes in capabilities, processes or outcomes.

- **General Posit** … analysis, and it's ability to support decision-making, constitutes an means to innovation
- **Specific Assertion** … inquiry approaches supported by advances in technology, primarily in informatics and "modeling, simulation & gaming," provides a means of achieving disruptive innovation
  - Beyond traditional notions of efficiency and effectiveness
  - Necessary approaches for dealing with longnow or "wicked hard" problems

Historical Precedents

- Decisions supported by an ability to ask questions about the world (analysis, synthesis, inquiry, etc.)
- Desire is to influence the world in a fashion to achieve goals of interest
  - Or, to at least avoid the “bad things” that could happen
- Policy analytic community provides an interesting example
  - Early 1900s, field was populated by individuals with training in law, divinity, etc.; or folks of social standing
  - 1920s, emergence of a “profession” largely populated by accountants
  - Emergence of policy analysis from ORSA community roots, occurred in the late 1960s
  - Late 1900s illustrated how practice has reached limitations
    - Inability to easily cleave “fact from value (context)”
    - *Complex* problems gained preeminence over *complicated* problems
  - What tools do we use now?

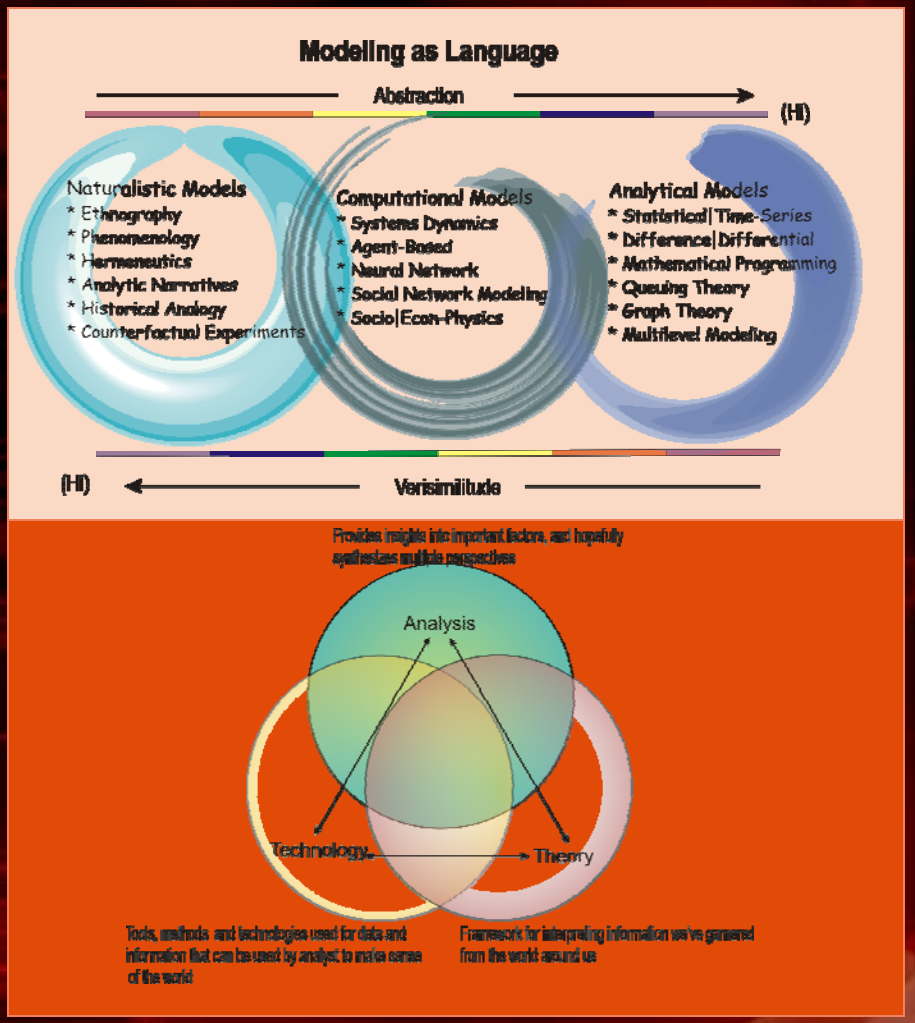


Disruption in the Realm of "Analysis & Decision"

- Analytic production
  - What is of importance to a decision-maker?
    - The ability to confirm "his or her" intuitions
    - Preponderance of evidence to support a "wow, who would have thought moment"
- Disruptive analytic capabilities would assure the above, but would also …
  - Support the consideration of highly "complex," or inter-coupled, problems
  - Give rise to ability to explore longer timelines
- "Shaping" capacity
  - **Shaping** … the ability to formulate and implement strategies or policies that give rise to a desired societal trajectory
  - Requires an ability to explore efficacious strategies, anticipated discontinuities, and co-evolutionary pressures
- Advanced analytics in support choice-making accounts for the capacity of a situation to change, or an adversary to learn
  - Advanced OODA-training

Commercial Possibilities

- Commercial possibilities arise from the Academy and the private sector
  - Revisiting the "body of human knowledge"
    - "Stuff" beyond the physical sciences
    - Interesting possibilities in the social and behavioral sciences
  - Consumers include the intelligence communities and C^2 staffs (strategic intelligence, consequence assessment, "strategy-task" v2.0)
- A focus area of note … advanced analytic (inquiry) technologies
  - Interesting business models emerge; analytic product is more important than technology artifact
  - Intuition augmented by formal notions of behavior



Actions by DOD

- Investments in the exploitation of the “social & behavioral” sciences
  - Note … fields are nascent compared to physical sciences, as well as different
    - Rate of return on investment is substantially greater than marginal improvements
    - Capacity is necessary, regardless of “youth”
    - Cool means of exploitation
      - “Six or so things to do with a bad model”
- Initial focus should be on insight-generation (enhancing the capacity of the analytic corps), and the ability to communicate complex ideas to decision-makers
  - Context (modeling)
  - Option Visualization
  - Collaboration