Reflections of an Itinerant Systems Analyst on this Workshop

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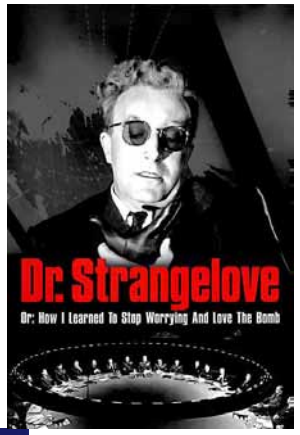


- From an IA perspective
- From a systems analysis perspective
- Some causes for optimism

First, a couple of questions:

(1) Where were the people this week?

(2) If you knew physical responses at all levels, how close would you be to deciding what to do?

Lessons From Monday-Wednesday

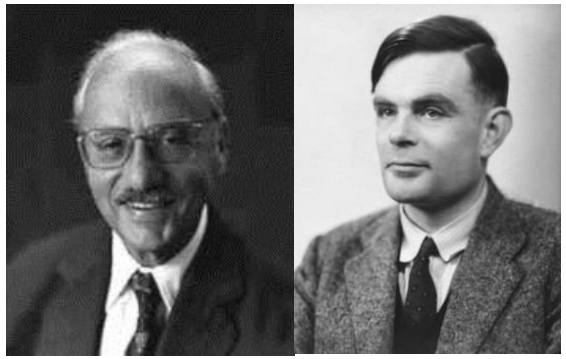
- Search for scale matching – right scaling
- Distinction between public and private adaptation
- Need for appropriate metrics (co-benefits?)
- Multiple scales necessary
- Need for translators/calibration/validation
- Need for emulators/hybrid methodologies
- Need for boundary organizations
- Need for ground truthing
- Need for two way communication/coordination
- Both observations and modeling required
- Tradeoffs between space and time resolution and uncertainty characterization
- Insights not numbers as a valuable goal

Integrated Assessment Perspective

- Multi-sector impacts may be significant (system boundaries)
  - Energy, land, water, food, climate, poverty, health, SLR, etc.
  - Could lead to significant competition, re-allocations, transfers of inputs
- Substitution of outputs could also be significant
  - General equilibrium effects (consumption, production, supply chains)
  - Transfers, inter-state commerce, international trade and aid, etc.
  - Can often ameliorate net impacts
  - But can also provide external shocks from outside regions
- Mitigation and impacts/adaptation interactions can be large
  - Land and water for biofuels squeeze agricultural/food markets
  - Climate change leads to energy supply and demand impacts
- Climate change feedbacks
  - Global earth system and back down
  - Regional
- Policy synergies
  - Land, agriculture, forest, energy, air quality, climate
  - Example includes climate change and air quality targeted policies.

Systems Analysis Perspectives

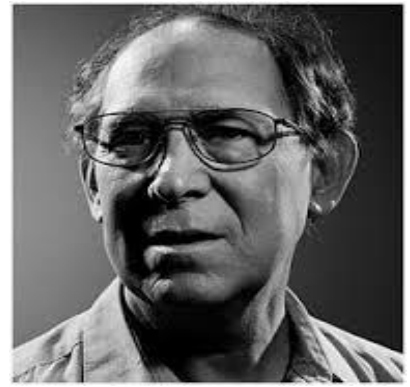
- This is (just like) war (hopefully not fighting the last war)
- Systems analysis can help (whiz kids/offset strategy)
- The 80/20 rule (short run planning, long run planning)
  - Public versus private adaptation
- Revolutions needed – institutions, technology, behavior
- Importance of C^3I (communication, command, control and intelligence)
- Actively manage risk using SDMUU
  - Learning (people and machines) and adaptive paradigm
  - Flexibility and real options key (what and when)
  - Subjective probabilities can be useful



Some Causes for Optimism

- All of you
- New technologies, institutions, behavior, business models

  Yes, there is an app for that!
- The millennials
  - They are ready
  - They will not take no for an answer



More Motivation

- Do. or not do. There is no try – Yoda

- Together-We can do this! –H. Keller

- IAMC can help

IAMC
Physical Earth Systems
Human Earth Systems
Integrated Assessment Modeling Consortium
iamconsortium.org
Founded 2007

Thanks and Questions Welcomed?