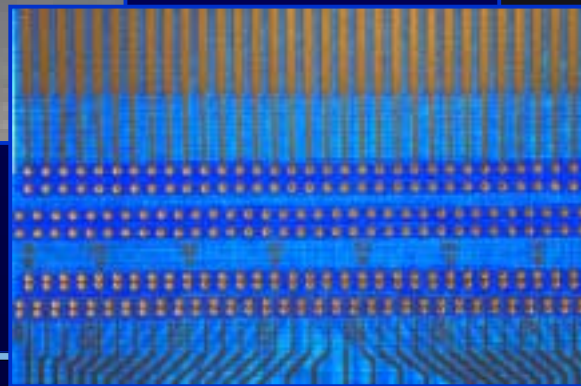
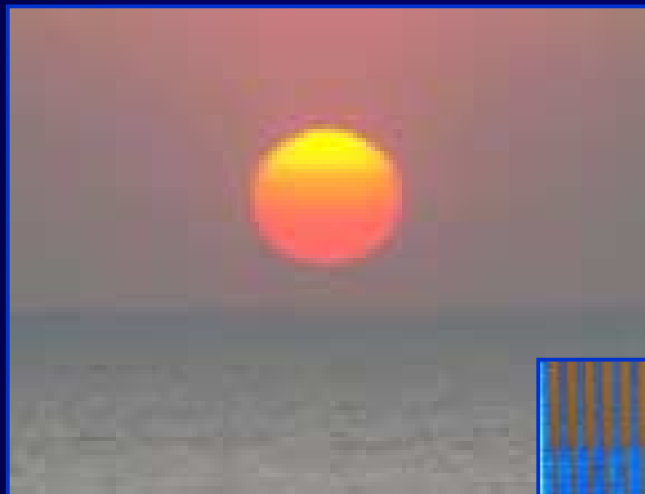


RAND

# Complexity and Public Policy: A Hallmark of the 21st Century?

*Bruce Don  
September 2000*



## Complexity Theory Coming of Age in the Policy Arena

- ◆ Applications are now well established in physical sciences
- ◆ New tools promise to deepen understanding and support decisionmaking in many fields
  - Regional development
  - Health care
  - The new economy
  - National security
- ◆ Now is an opportune time to hold dialogue about current uses and potential applications

# Complexity Theory's Potential Power: One Story from RAND

- ◆ Combat simulation model produced unusual results
  - Unanticipated outcomes,
  - Counterintuitive scatter of regions favorable to Red and Blue



## Results Led Us to Revisit Key Premises

- ◆ Unusual patterns could not be dismissed as artifacts of model
- ◆ We were forced to consider possibility that results reflected real world
- ◆ Practical implications:
  - Force ratio needed to guarantee Red success much higher than previously believed
  - Blue can provide credible deterrent with lower force ratio if Red is risk adverse

## The Moral of the RAND Story

- ◆ Complexity may be a characteristic of real world systems
  - Not just a “problem” with the simulation
- ◆ Policy decisions need to account for this
- ◆ New tools and thinking show promise
- ◆ Result may provide a fresh approach to daunting problems and lead to:
  - More robust solutions
  - Fewer unintended consequences
  - Solutions more acceptable to many stakeholders

## We Have Brought Together Two Sides of a Dialog

- ◆ Scientists, mathematicians, analysts:
  - the “supply” side
- ◆ Decisionmakers and leaders in government and the private sector:
  - the “demand” side
- ◆ The overarching practical question:

*How to enable the discussion?*

