

Counter-Deception Decision Support

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MITRE Sponsored Research

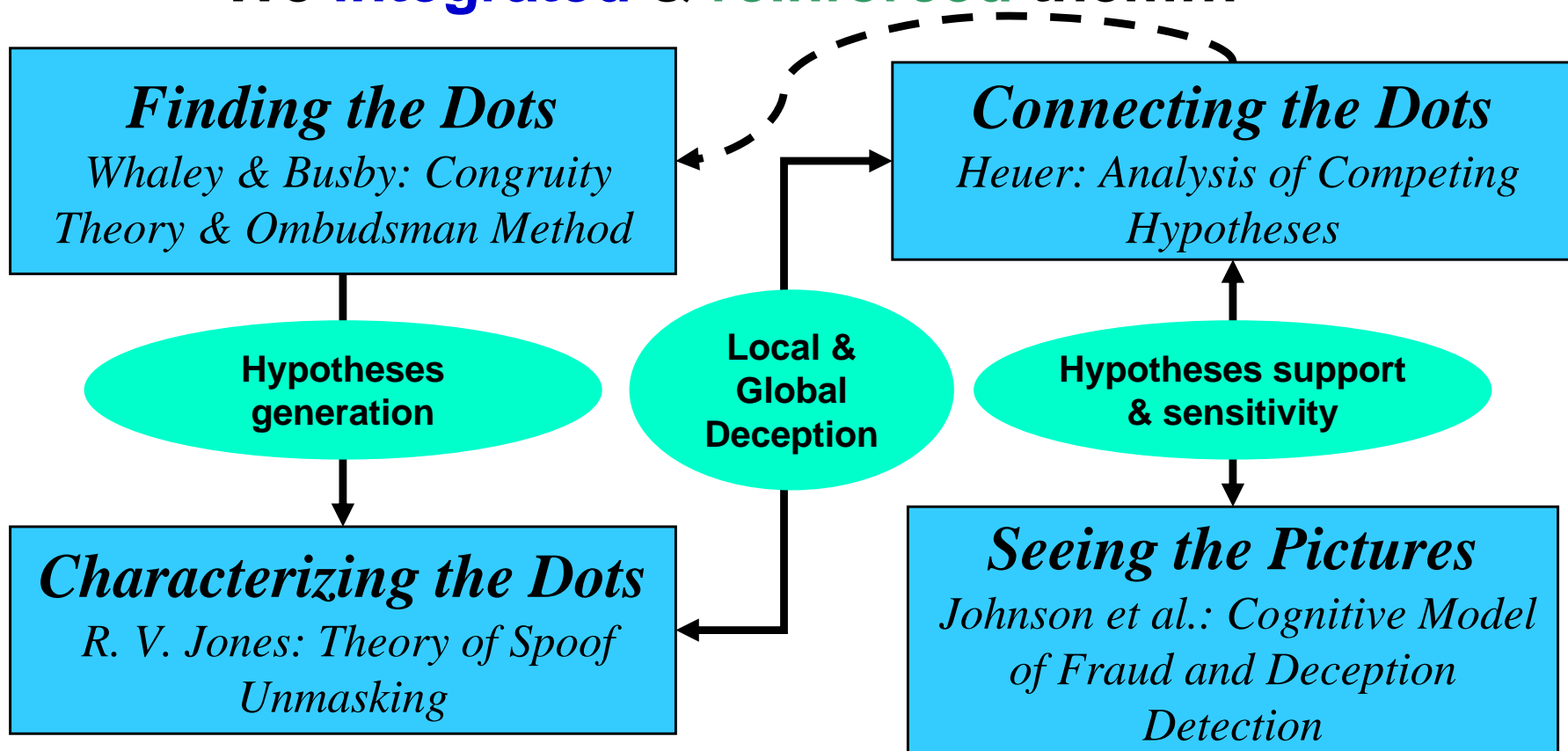


Problem

- **The aim of deception is to**
 - disrupt one's ability to “observe, orient, and decide”
 - induce inaccurate impressions about capabilities or intentions, causing the target to
 - apply intelligence assets inappropriately
 - fail to employ capabilities to best advantage
- **Most proposed counter-deception approaches**
 - Take little account of the psychology of deception
 - Fail to offset biases due to faulty heuristic reasoning
 - Especially the tendency to reason from evidence to hypotheses

Background

- We discovered components of a counter-deception theory existed.
- We **integrated** & **reinforced** them...



Objective

■ Combine

- psychological theories of:
 - decision making errors and biases
 - deception
 - cognitive tasks involved in counter-deception
- Course of action planning and belief management technology

■ Components of a counter-deception decision support system

Activities

- **Year 1 Integrate:**

- Research on cognitive limits and biases
- Deception taxonomy and models
- Counter-deception cognitive models

- **Year 2 Computational infrastructure:**

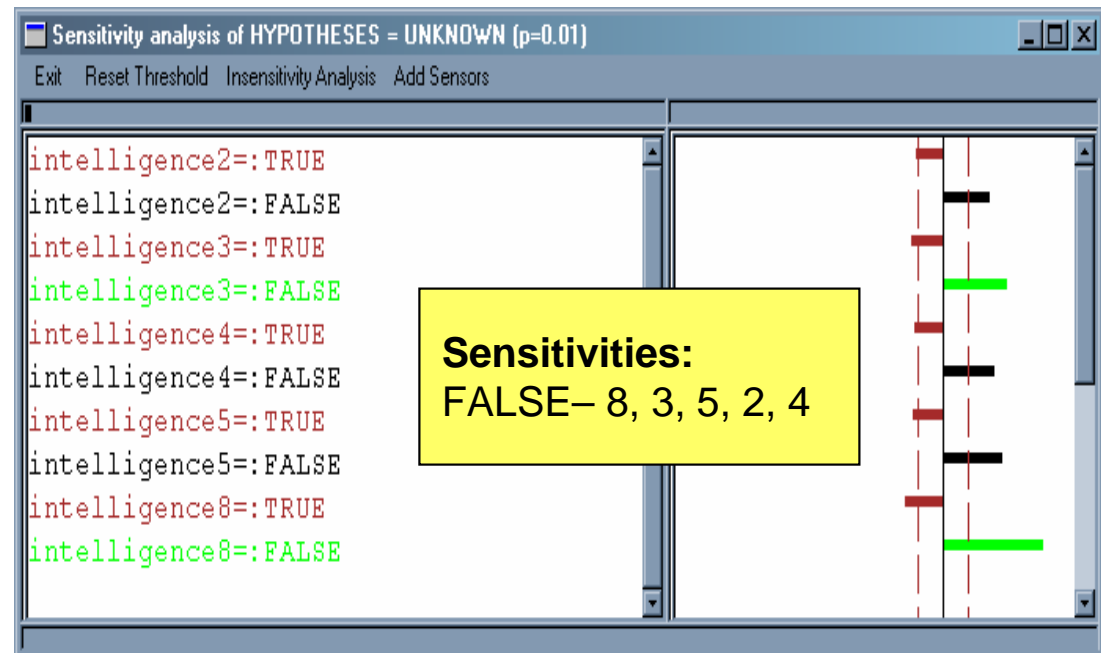
- Belief management
- Automated sensitivity analysis

- **Year 3 Counter-deception decision support system:**

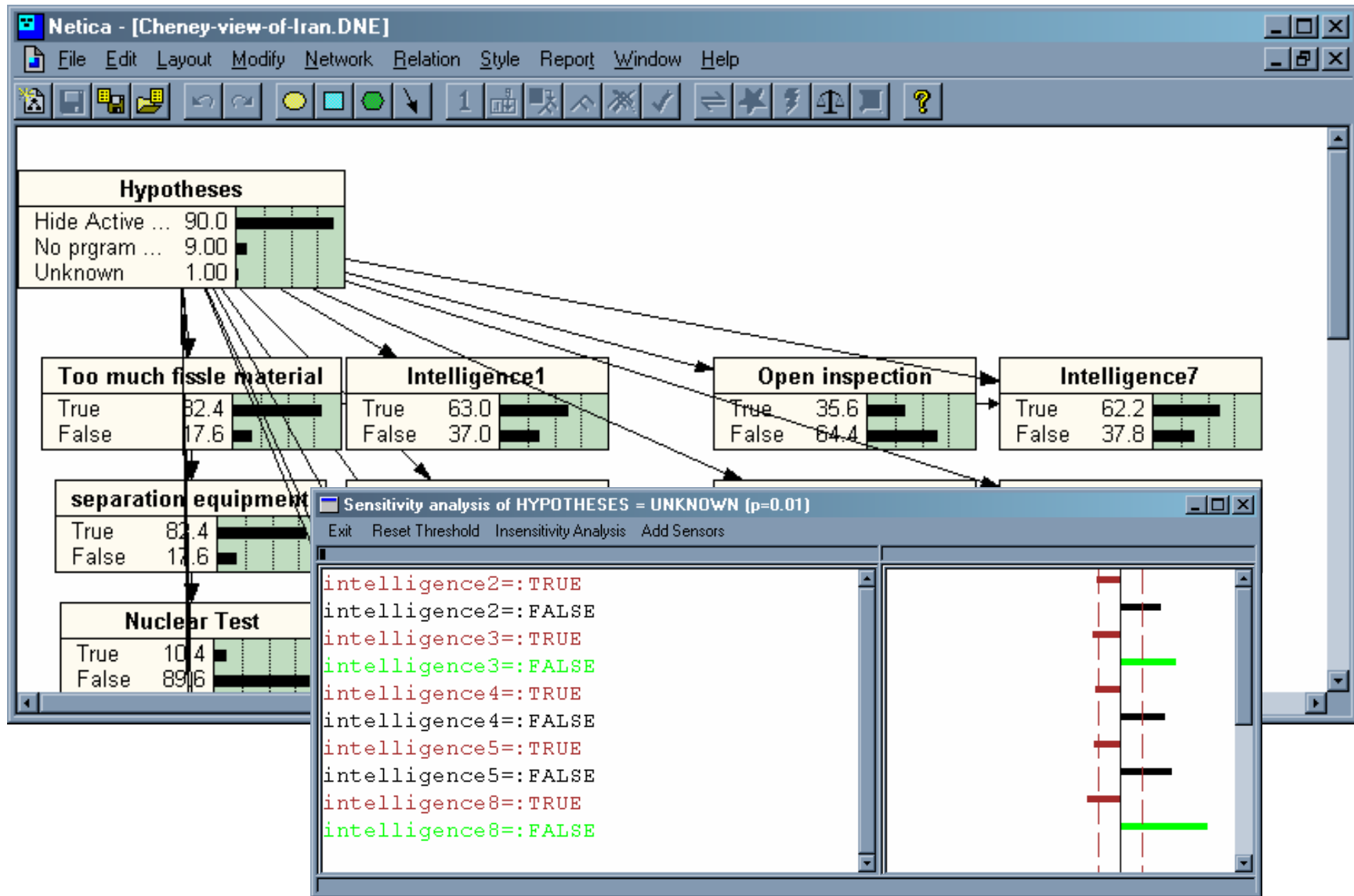
- Refine theory and tools
- Experimental verification
- Outreach

Highlight

- **Tactical counter-deception**
 - Course of action planning
 - Sensitivity analysis
- **Strategic counter-deception**
 - Expert elicitation
 - Sensitivity analysis



Demonstration



Impacts

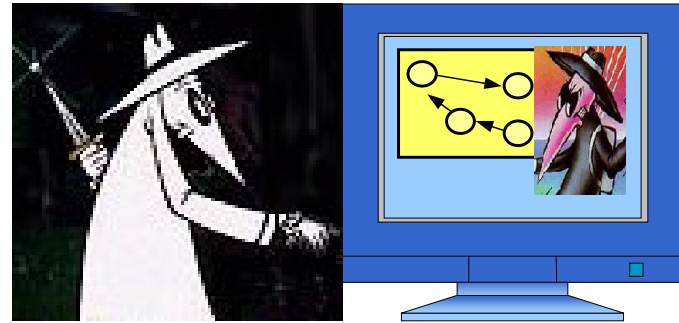
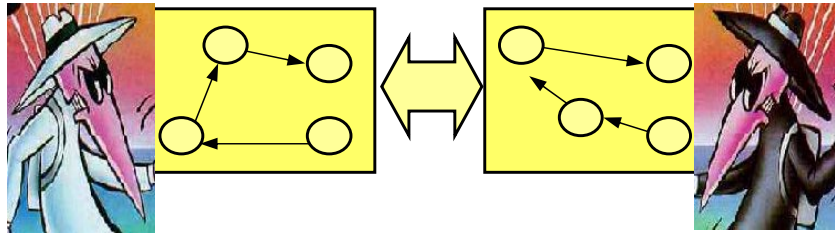
■ **Application:**

- SOCOM: OIF CENTCOM & J39 PACOM support
- Analysis of terror attack denial & deception
- IRS-Treasury potential:
 - “TurboFraud” detection

■ **Outreach:** Lectures and presentations

- Sherman Kent School
- Foreign Denial & Deception Committee
- Naval Post-graduate School
- Consortium for the Study of Intelligence
- Military Operations Research Society

Future Plans



- **Outreach**
 - Intelligence community schools
 - Forensic auditing & accounting
- **Experimentation**
 - Identify known deceptions
 - Recognize new deceptions
- **Automated hypothesis generation**