



Command Center Functionality for Soft Targets

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This material is based upon work supported by the U.S. Department of Homeland Security under Grant Award 22STESE00001-02-00. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Department of Homeland Security.



So What? Who Cares?

- Command centers for protection of soft targets and crowded spaces can benefit from decision support systems
 - Processing sources of diverse inputs
 - Reducing uncertainty as to status and future evolution of threat
 - Assist with complex decisions, with difficult options to evaluate
- SENTRY is doing research on potential analytics to be used in command centers
 - Guided by interactions with partners, PAB, and visits to command centers in LA/LB CBP, Newark and New York transit sites



What is a Command Center? Ask Bard...

- A command center is a centralized location where people can monitor and control operations. Command centers are essential for coordinating complex operations and making timely decisions.
- Major Components
 - Communication and technology equipment
 - Allows people in the command center to communicate with each other and with people in the field.
 - Real-time data and analytics
 - Access real-time data, and analytics, used to track the situation and make informed decisions.
 - Expertise and support
 - Team of experts who can provide real-time analysis and support



What is a Command Center? Ask Vendors...

- Communications, computers, displays, cybersecurity, networking, power, redundancy, ...
 - But: What should be inside the computers to support effective decision-making?



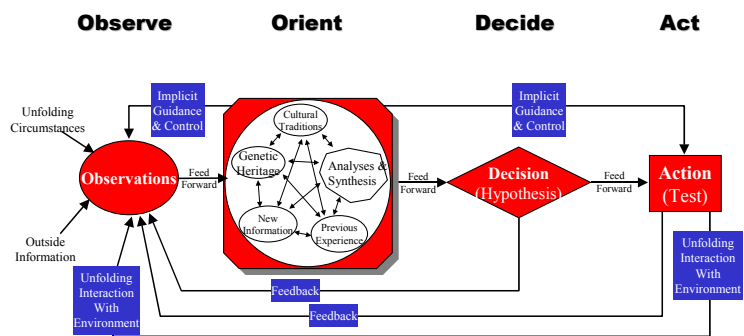


Command Center? Georgia Department of Public Health

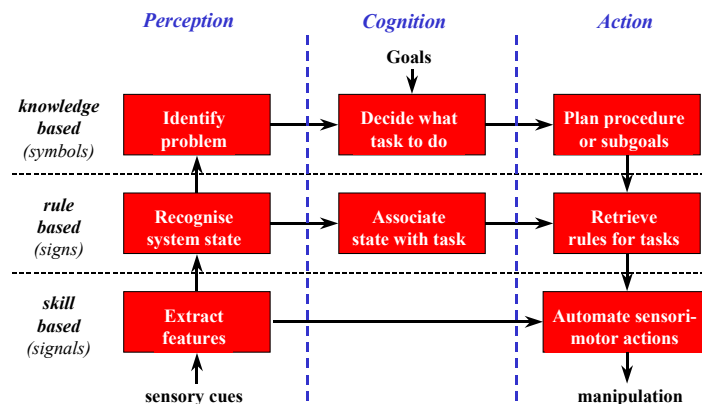
- “The Command Center is really a place where uncomfortable people meet in cramped conditions to play unfamiliar roles making unpopular decisions based on inadequate information in much too little time. True or False?” Form and Function of a Command Center, 2014
- It is a central location to provide command, coordination and decision-making in support of the incident response
 - Communication and Intelligence
 - Analyze, summarize, display incoming information
 - Ongoing communications to generate, disseminate situation awareness
 - Command and Control
 - Establish common operating picture, make decisions, assign tasks, deploy and track critical resources
 - Coordination and Documentation
 - Internal and external partners



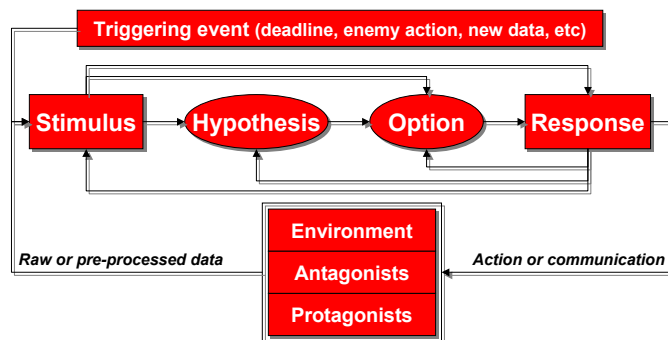
Human Decision Making: What analytics must support



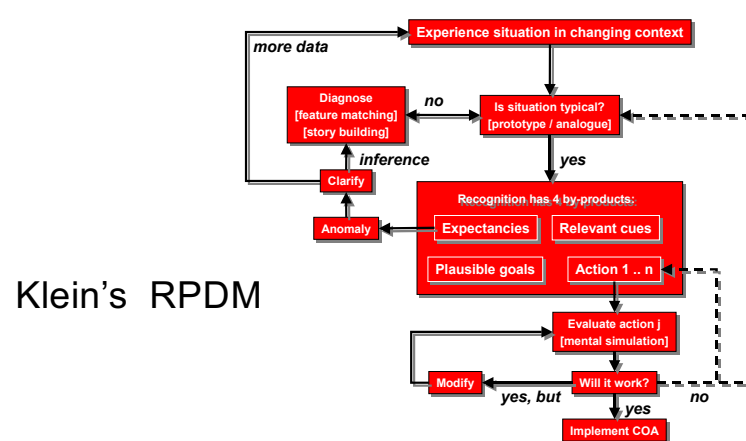
Boyd's OODA



Rasmussen's PCA



Wohl's SHOR



Klein's RPDM



Some Opportunities for Analytics

- Perception, Orient, Hypothesis, Processing, Diagnose
 - Summarize and interpret incoming data (e.g. video, social media monitoring, other sensing modalities)
 - Potentially overwhelming amount of data input
 - Identify areas of possible concern
 - Fuse information from diverse sources (sensors, human, ...)
 - Generate accurate operational picture
 - Task information resources for “clarification”
 - Reduce uncertainty, resolve alarms, confirm threats



Some Opportunities for Analytics-2

- Option generation, evaluation
 - Identify available resources for tasking
 - Recommend desirable, feasible courses of action
 - Provide evaluations of alternative courses of action in antagonistic situations
- Action generation and monitoring
 - Generate directives and information for resources
 - Monitor execution of plans to identify emerging gaps, need for replanning



Summary

- Effective Command Centers require good function and good form
- Much effort is spent in designing good form
 - Hardware, communications, connectivity, security, location
- SENTRY is trying to develop analytics to enhance proper functioning of command center
 - Interested in suggestions for analytics that would be valuable for command centers in DHS enterprise applications