Trust as a Design Contingency: Laboratory Experimentation in a Counterterrorism Context

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Research Questions

- How do social configurations (operationalized here as coalition organizational designs and trust conditions) interact dynamically to affect information propagation and organizational performances in pre-crisis decision-making?

  - What effect does trust and lack of trust have on task performance?

  - What organizational designs produce higher task performance?
Assumptions

- Crisis prevention and counterterrorism efforts require trust among coalition groups
- Trust matters for organization performance
- Performance depends on design parameters
Organizational Design Choices

- Contingency perspective: which design makes the most sense for pre-crisis decision making?
  - **Rigid Hierarchy**: hierarchical, top-down, command and control vertical
  - **Flexible Edge**: flat, horizontal, networked, self-organizing teams or networks

Mintzberg, 1979; Alberts & Hayes, 2003
Organizational Trust

• Trust is defined as:

  “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that party”

Mayer, Davis, & Schoorman, 1995
Dimensions of Trust

• Three basic dimensions of trust
  
  ○ **Benevolence**: organization members are generally pre-disposed to doing good to each, and concerned for others’ well-being
  
  ○ **Competence**: organization members demonstrate knowledge, skills, and ability to get their work done
  
  ○ **Integrity**: organizations members actions are consistent, congruent, and credible with established values and norms

  Mayer, Davis, & Schoorman, 1995
Research Hypotheses

- **H1**: Trust outperforms low trust
  - **H3**: (Flexible + trust) outperforms (flexible + low trust)
  - **H4**: (Rigid + trust) outperforms (rigid + low trust)

- **H2**: Flexible organizational design outperforms rigid design
  - **H5**: (Flexible + trust) outperforms (rigid + trust)
  - **H6**: (Flexible + low trust) outperforms (rigid + low trust)
Research Design

• **Laboratory Experimentation**
  ○ Pilot + 8 lab sessions
  ○ ELICIT Environment (i.e., client-server version with co-located players in networked labs)

• **Task Environment**
  ○ Coalition network information sharing and processing tasks
  ○ Identify the who, what, where, and when of imminent terrorist threat using factoids (informational clues to uncover the plot)

• **Participants’ time-stamped and recorded interactions provide performance data**
Subjects and Treatment Groups

• **Subjects:**
  - 136 1st quarter military junior officers (acting as intelligence officers)
  - Participants consisted of mid-career US and Coalition military officers and government employees

• **Treatment Groups:**
  - Subjects assigned to one of four groups (17 players in each condition)
  - Experiment was run twice on consecutive days for a total of eight experimental groups

• **Like coalitions:**
  - Each group contained equally distributed representation of military service branch, officer subspecialties, gender, rank, and country of service
Experimental Design

- **2x2 factorial:** manipulate organization type and trust

<table>
<thead>
<tr>
<th>Trust</th>
<th>Low Trust</th>
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<tbody>
<tr>
<td>Rigid Hierarchy</td>
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<td>Rigid Hierarchy/ Low Trust</td>
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Trust Manipulations

- **Trust**
  - Subjects briefed on expectations high level of trust in their organization based on the three elements of trust
  - Others subjects are encouraged to share information, and the others work competently and cooperatively

- **Low Trust**
  - Subjects briefed on expectations for low level of trust in their organization based on the three elements of trust
  - Other subjects may withhold information, or may be moles or free riders
**Organizational Manipulation**

- **Rigid: Hierarchy**
  - 3-level hierarchy, fixed roles
  - Communication limited to functional groups
  - Subjects received instructions about how to share within their hierarchical organization

- **Flexible: Edge**
  - No hierarchy or roles
  - Unrestricted communication
  - Subjects given option to design their communication/information sharing norms
Performance Measures

- **Accuracy**: How well did individuals identify the who, what, where, and when of the possible attack?

- **Speed**: How quickly did individuals identify?
## Statistical Support

### Hypotheses

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<tr>
<th>MANOVA</th>
<th>ANOVA Speed</th>
<th>ANOVA Accuracy</th>
<th>Effect</th>
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<tr>
<td>Supported</td>
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Results

• Problem-solving speed & accuracy correlated
  ○ Analysts working faster are more accurate!

• Strong interaction effects
  ○ Organization design + trust are powerful predictors
Speed: Interaction Effects

- **Flexible Edge** best overall, requires trust
- **Rigid Hierarchy** good with mistrust
Accuracy: Interaction Effects

- **Flexible Edge** best overall, requires trust
- **Rigid Hierarchy** insensitive to trust-mistrust
Leadership implications
- If trust is present or can be developed: flexible Edge delivers best performance
- If mistrust is present, possible, or cannot be overcome: rigid Hierarchy is safest choice
- Leaders must judge whether:
  - best performance of flexible Edge outweighs safest choice of rigid Hierarchy
- Efforts to promote trust in rigid Hierarchy may be futile
- Organizational redesign + trust is powerful

Accelerating cultural integration & change
- What if mistrust is pervasive but Hierarchy is infeasible?
- Can inclusion of fringe in Edge develop trust?