**Introduction**

- **Research Topic**
  - Jury decision-making
  - Communication procedures

- **Research Method**
  - Computer Simulation
  - Connectionist Network Model

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**Juror Schematic**

- **Properties:**
  - Model
    - Units
    - Connections
    - Weights
  - World
    - Hypotheses
    - Constraints
    - Correlation between hypotheses
    - Current beliefs
    - Environment

(adapted from Hutchins, Cognition in the Wild)

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**Jury Schematic**

- **Properties:**
  - Model
    - Inter-net connection
    - Inter-unit connection between nets
    - Connection weights
    - Time course
  - World
    - Who talks to whom
    - What they talk about
    - Persuasiveness
    - When they talk

(adapted from Hutchins, Cognition in the Wild)
Trial Corpus
- 16 Trial Configurations
- Combinations of:
  - prosecution & defense evidence
  - strength & length of presentation

Experimental Conditions
- Late Deliberation (Normal)
- Early Deliberation (Experimental)

Results
<table>
<thead>
<tr>
<th></th>
<th>Avg. Time (cycles)</th>
<th>Guilty Ratio</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late</td>
<td>58.4</td>
<td>49.2 %</td>
<td>-0.30</td>
</tr>
<tr>
<td>Early</td>
<td>36.9</td>
<td>76.6 %</td>
<td>-0.54</td>
</tr>
</tbody>
</table>

Main Effect of Deliberation Onset
- Late
- Early

Effect of Evidence
- Mean Guilt
- Evidence Ratio (Prosecution / Defense)

Effect of Evidence Per Condition
- Mean Guilt
- Evidence Ratio (Prosecution / Defense)
Interpretation

- Early deliberation:
  - More "guilty" verdicts
  - Shorter "trials"
  - Redistribute "guilty" verdicts over trial configurations

Conclusion

- Communication procedures:
  - Main effect on group behavior when individual behavior is held constant
  - Predicted by order of evidence when framed by confirmation bias
  - Possibility of other effects at limit conditions

References


Outline

- Research Motivation
- Model
- Simulation
- Results
- Interpretation
- Questions

Terminology

- Constraint Satisfaction
- Confirmation Bias
- Connectionist Network

Research Motivation

- Theoretical Motivation
- Practical Motivation
- Previous Jury Research
- Distributed Cognition Approach
Model Choice
- Constraint Satisfaction Network
- 12 "Juror" Networks
- "Jury" Network
- Trial Corpus
- Onset of Deliberation

Limitations
- Mapping from constraint network to mental processes
- Mapping from inter-network communication to discourse
- Mapping from trial corpus to actual trial dynamics

Trial Corpus
- 16 Trial Configurations
- Combinations of:
  - prosecution & defense evidence
  - strength & length of presentation
- Legend -- Pstr, Plen, Dstr, Dlen
  - Trial configuration "lhhl" is a weak, long prosecution with a strong, short defense

Trial Epoch
- 5 Trial Phases
  - Prosecution case
  - Defense case
  - Prosecution closing arguments
  - Defense closing arguments
  - Deliberation

Simulation
- 256 epochs -- 8 epochs per trial configuration (16), per condition (2)
- 32 verdict ratios
- 32 average deliberation times
- Overall verdict ratio
- Overall average time
- General Linear Model analysis

Trial Time
Guilty Ratio

Percentage of guilty verdicts

Trial Configuration

Early Deliberation
Late Deliberation