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When Do Organizations Need to Change (Part II)? Incongruence in Action

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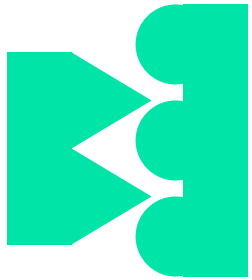
Questions & Objectives

- Do model-based predictions of (in) congruence produce measurable difference in process and outcome?

Organization  Mission vs. Organization  Mission

- Measure the effects of congruence on organizational performance and processes
- Lay the foundation for further work on structural adaptation
  - Identify leading indicators of incongruence
    - How do we support/induce adaptation?

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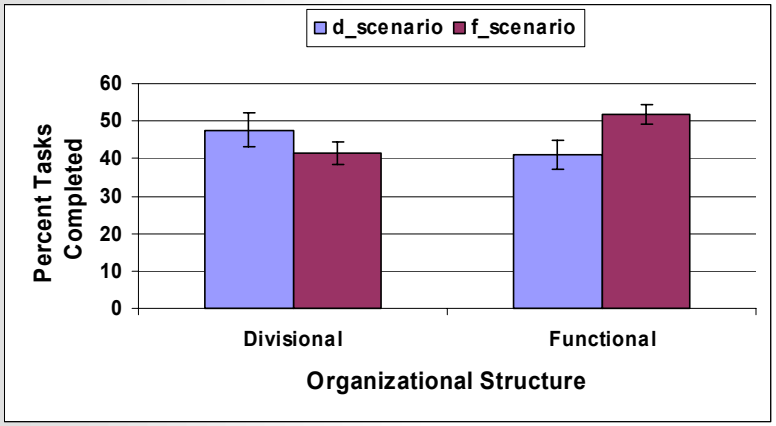
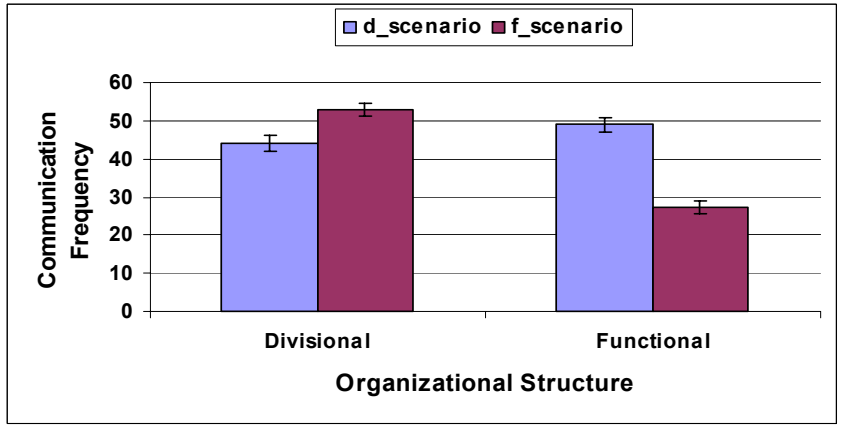
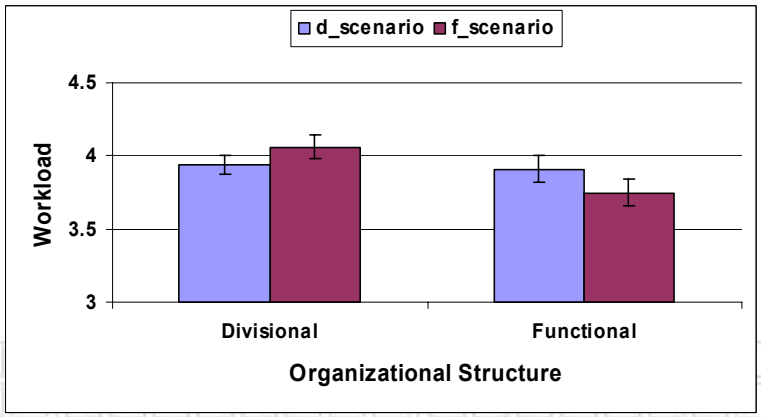
Overall Performance & Process

- Overall, as predicted based on the model design process, relative to the congruent conditions, in the incongruent conditions:
  - Performance was worse
  - Communications volume was higher
  - Perceived workload was higher







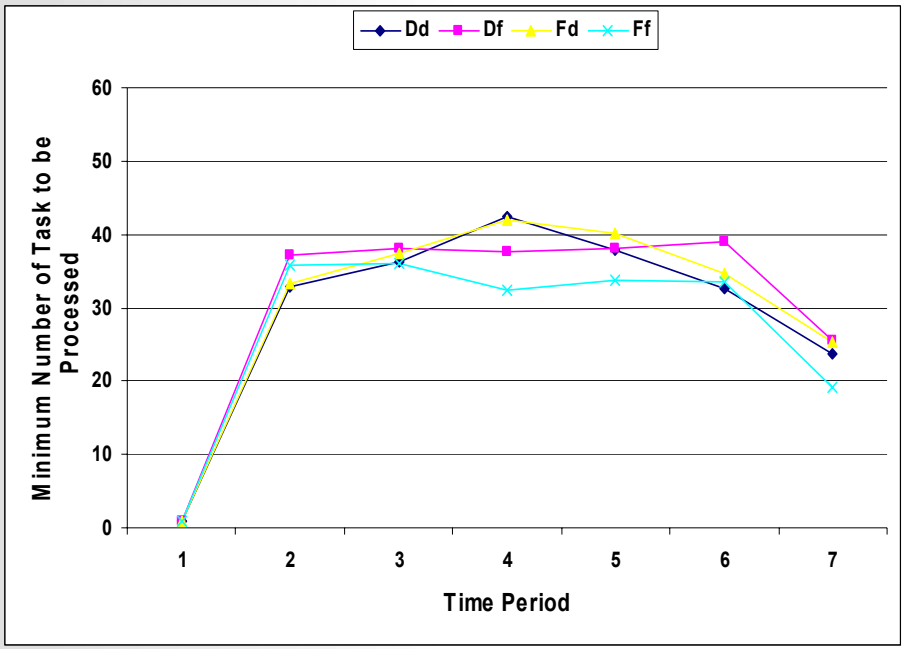
The Analysis Goal

- Overall results indicated that the congruence manipulation was successful.
  - However, to successfully support structural adaptation, we must identify leading indicators of the need for change.
  - These measures must be identifiable in real time, early in the scenario.
- Thus, focus analyses on measures of performance and process over time.
  - “Congru-o-meter”

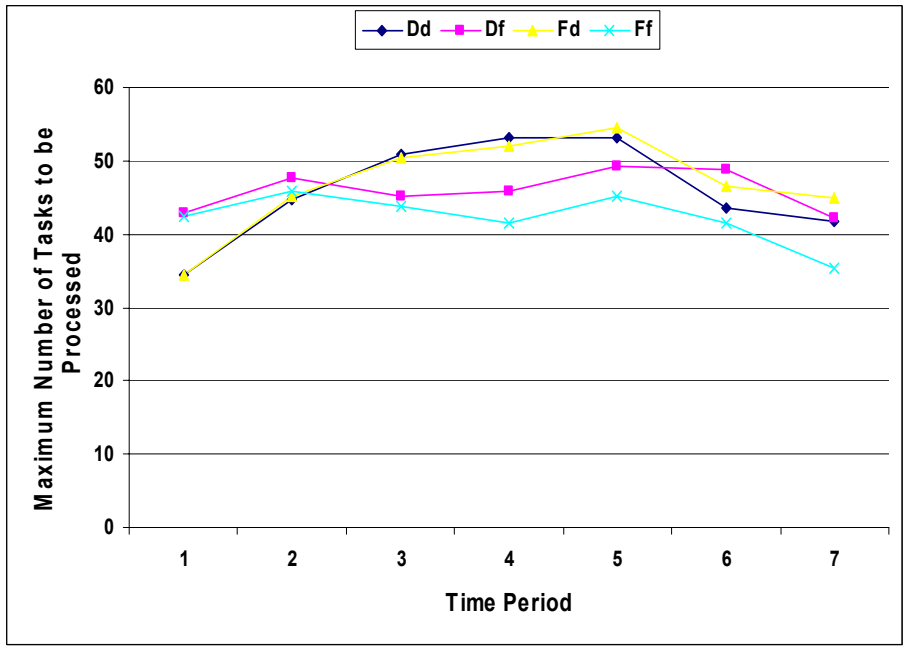
Tempo

- The tempo of the game – the number of tasks to be processed at any one time – varied over time and depended on condition

Minimum

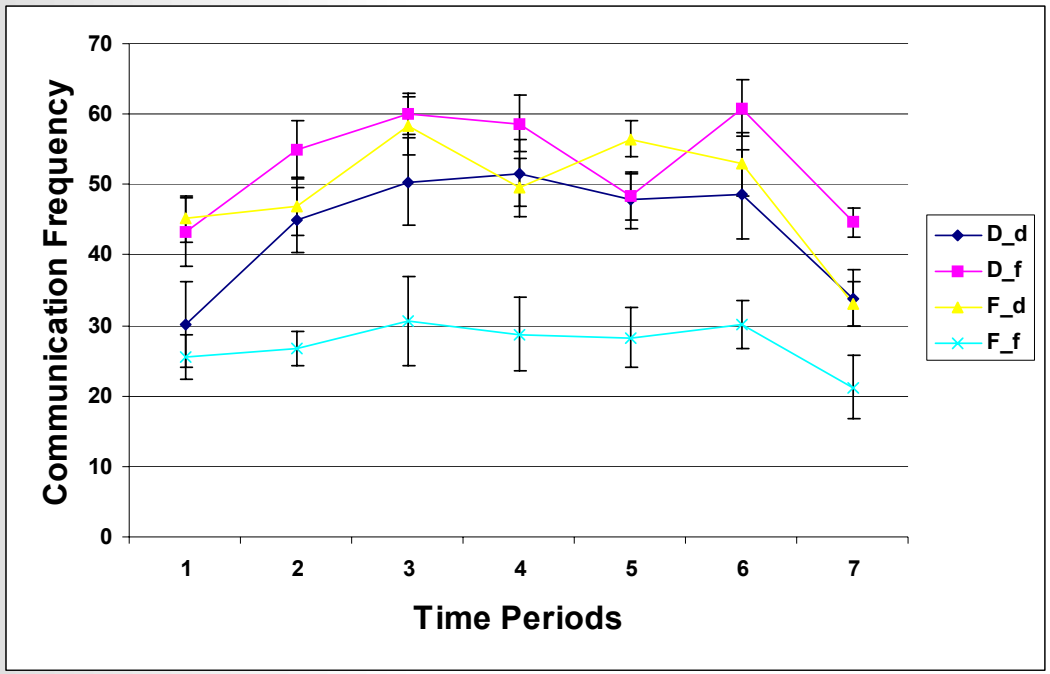


Maximum

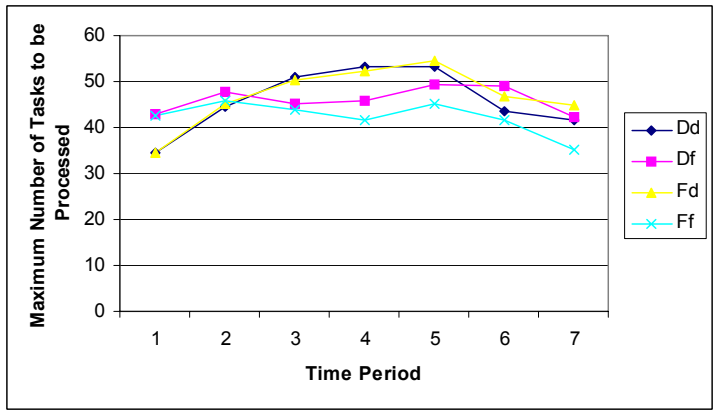


Communications Over Time

- Differences in communications volume persisted over time and were present early



Tempo



→ Bigger changes in Functional Organization

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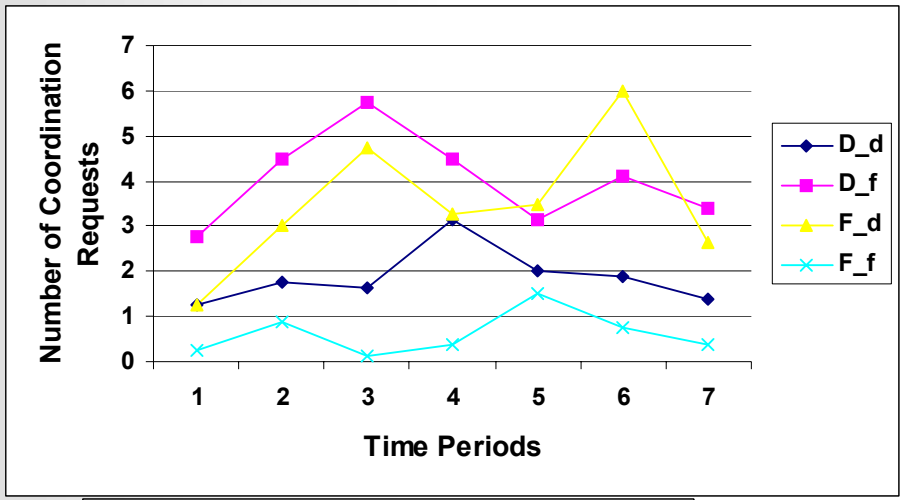
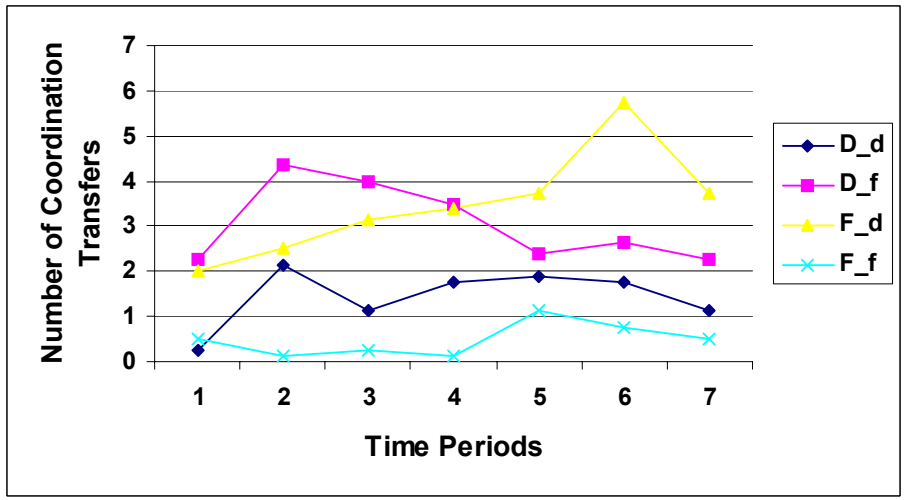
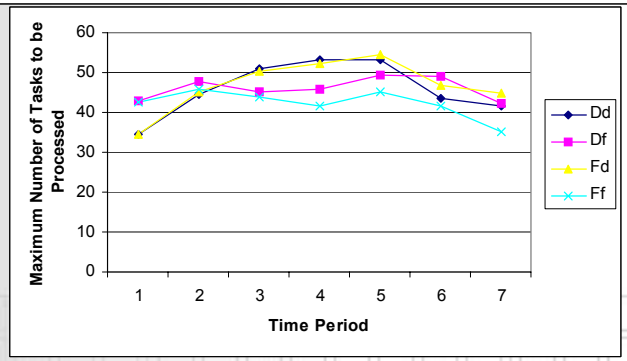
Communications Over Time

- Differences in communications about coordination persisted over time and were present early



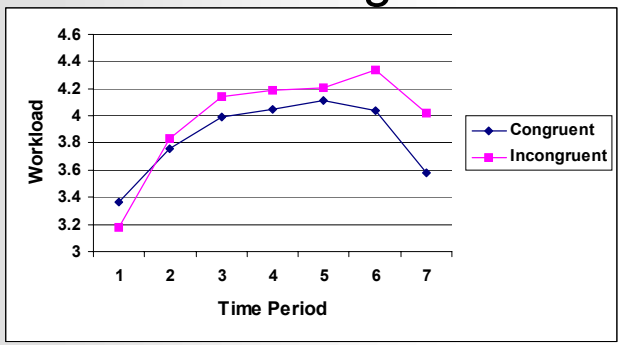


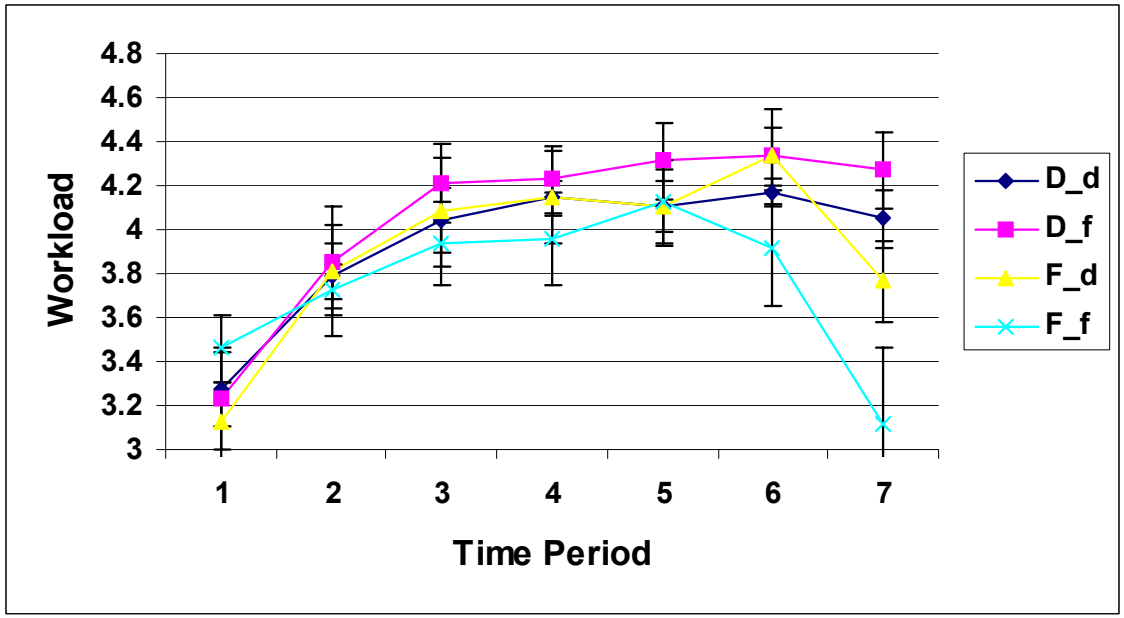


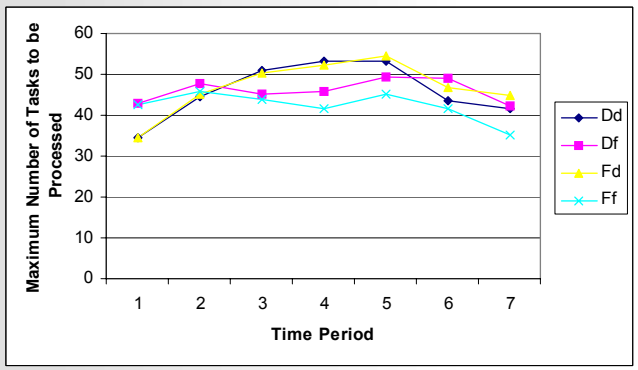
→ Bigger changes in Functional Organization

Perceived Workload Over Time

- Workload varied over time and depended on condition
  - Workload tended to be higher in incongruent cases
  - Diverges with time







→ Large drop-off in Functional Organization

Performance

- The manipulations of congruence were successful in changing communications and perceived workload.
  - These changes were predicted by the model-based manipulation of coordination requirements.
  - These differences were present early in the missions.
- Given these changes in response to coordination needs, we expected performance to be worse in the incongruent conditions.
  - Will performance differences be present early?

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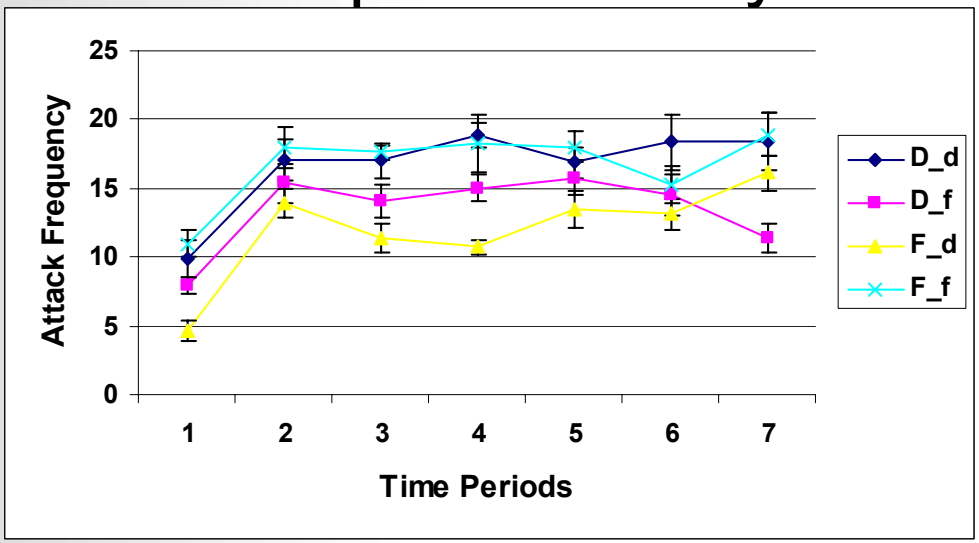
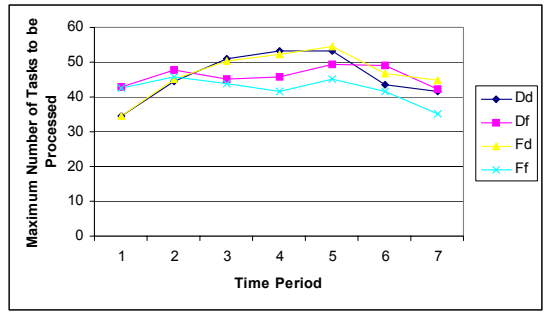
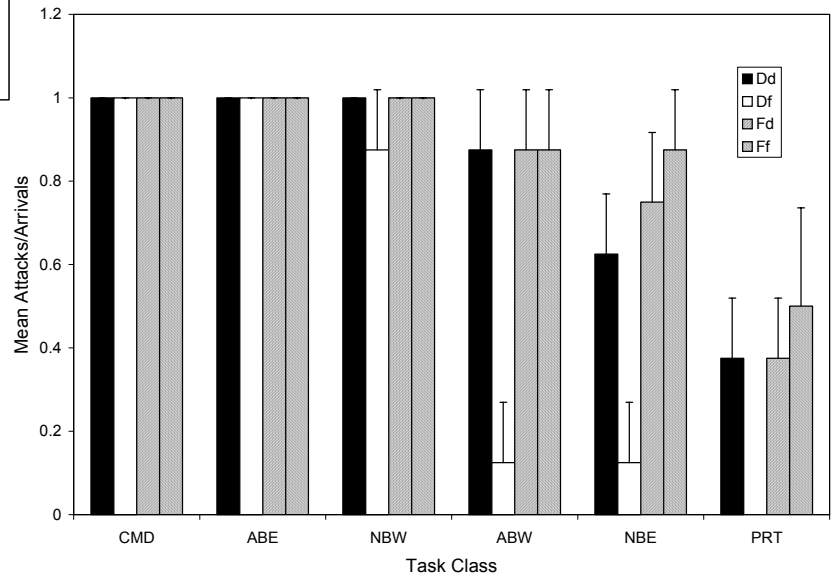
Performance Over Time

- Differences in the frequency of attacks were present early and varied over time.





- The Divisional structure was less successful on the final mission tasks



Incongruence in Action

- There were differences in communications, workload, and performance between the conditions early in the mission scenarios.
  - In particular, communications differences seemed to be present early.
- Taken together, the results suggest that the Functional and Divisional teams adapted their strategies differently
  - Compared to the Divisional teams, in response to incongruence, the Functional teams changed their communications strategies to a much greater extent.
    - How much they talked
    - The pattern of communication (to who)
    - The content of communication (about what)

Implications for the Congru-o-meter

- In the context of this experiment, the strategy changes, or leading indicators of the need for structural adaptation, depended on structure-scenario pairings.
  - These differences mattered even in these “small” and “simple” organizations
  - Strategies for coping with incongruence may differ depending on context and this may be especially true for complex organizations
- Many of the analyses shown here are calculable in real time, as demonstrated by the over time analyses
  - Communication strategies may reflect subtle differences and are present early in the game
  - It may be possible to measure communications in real time – likelihood, frequency, from/to, and potentially even content

→ Is this the road to a congru-o-meter?

Conclusions

- The organizations and scenarios studied here set the stage for further work on structural adaptation
  - Based on modeling work we successfully created the conditions under which change is needed
- What incongruence looks like in action depends on context
  - Strategies for coping varied
  - The leading indicators will likely be complex
    - Communication strategies in response to incongruence were different in D and F.
    - Even in the “small” and “simple” organizations studied here contextual effects make things
- The congru-o-meter will need to be context sensitive
  - Communication measures are candidates for leading indicators