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

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Communications Over Time

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

\[ D_d, D_f, F_d, F_f \]

\[ \text{Tempo} \]

\[ \rightarrow \text{Bigger changes in Functional Organization} \]
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

\[\text{Large drop-off in Functional Organization}\]
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?
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