Introduction

- **Convergence** is the phenomenon in which individuals’ behavioral and linguistic characteristics become more similar to characteristics of their partners’ behaviors and speech during interaction.
- Convergence is found in many features of speech and other behaviors, including e.g. vowel features, pitch, speech rate, and turn-taking behaviors.
- **Objective**: Correlations among eight features across pairs of interlocutors: F1, F2, vowel duration, pitch, intensity, turn duration, pause duration within turns, and pause duration between speakers.

Hypotheses

**Hypothesis 1**: Correlation in convergence across features.

**Hypothesis 2**: Correlation in convergence across tasks.

Correlation by Individual and by Task

**Figure 1**: Correlation for convergence in pairs with the same individual; $R = 0.33$, $p = 0.05$

- Positive correlation between a pair’s convergence in a feature in different tasks
- Positive correlation between convergence in pairs containing the same individual
- Lack of correlation between a pair’s convergence in different features
- Perhaps resulting from different salience of features to different listeners

Correlation by Feature

Little correlation convergence in different features for each pair; no trend for correlations to be positive or negative. Only three significant correlations, all with task-related or physiological explanations.

<table>
<thead>
<tr>
<th>Feature</th>
<th>F2 Vowel Duration</th>
<th>Intensity</th>
<th>F0 Turn Duration</th>
<th>Cross-Turn Pause Duration</th>
<th>In-Turn Pause Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>-0.17</td>
<td>0.3</td>
<td>-0.14</td>
<td>-0.15</td>
<td>0.32</td>
</tr>
<tr>
<td>F2</td>
<td>0.19</td>
<td>-0.1</td>
<td>0.35*</td>
<td>0.26</td>
<td>0.1</td>
</tr>
<tr>
<td>Vowel Duration</td>
<td>0.29</td>
<td>-0.09</td>
<td>0.05</td>
<td>-0.08</td>
<td>-0.07</td>
</tr>
<tr>
<td>Intensity</td>
<td>-0.16</td>
<td>-0.29</td>
<td>0.16</td>
<td>0.03</td>
<td>-0.3</td>
</tr>
<tr>
<td>F0</td>
<td>-0.3</td>
<td>0.47***</td>
<td>-0.27</td>
<td>0.27</td>
<td>0.49***</td>
</tr>
<tr>
<td>Turn Duration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-Turn Pause Duration</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pause Duration</td>
<td></td>
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</tr>
</tbody>
</table>

**Table 1**: Correlations for difference in partners’ means through all time periods

- **Methodology**
  - Phonetic measurements from 8 pairs of female speakers of English, ages 18-22
  - 4 high-liking pairs; 4 low-liking
  - Task 1: trivia questions
  - Task 2: undirected conversation

Conclusions

- Positive correlation between a pair’s convergence in a feature in different tasks
- Positive correlation between convergence in pairs containing the same individual
- Lack of correlation between a pair’s convergence in different features
- Perhaps resulting from different salience of features to different listeners

Future Directions

- **Additional Results**: Patterns of individual change correlated across tasks and between partners; trend of positive correlations between features.
- **Future Work**: Individual variation in convergence: recording each individual in several pairs and in different tasks. Clearer individual tendencies? Connected to ratings of partner cooperativeness/likeability?
- **Future Work**: Connections between individual tendency to converge in a feature and to use that feature as a cue for identifying sounds or speakers. Effects of altering or obscuring that cue as compared to others?

Selected References


References


