Poster sessions

http://www.lancs.ac.uk/users/esqn/windsor04/posters/


http://www.phon.ucl.ac.uk/home/mark/ukspeech/apr03-3.jpg
Poster preparation

• **Poster session**
  - ca. 2 hours;
  - Authors: stand at poster, explain study & answer questions from visitors,

• **Contents** (see next page)
  - Banner: title, authors & affiliations (contact info)
  - Modules: Abstract, Introduction, Methods, Results, Conclusions,
  - References & Acknowledgements

• **Construction** (cf. “Make a poster using PPT” handout)
  - Poster size: 3’x5’, 4’x6’, or see requirements & size of board
  - Consider: audience, time limit, effectiveness of communication
    - for **“eye appeal”, use**
      - large print (title: 72pt bold, subtitle: 48pt bold, text: 24pt)
      - modular approach
      - light background
    - for **conciseness & clarity, use**
      - bullet points (no waste words!)
      - graphics
      - “stand alone” contents

• **Other preparations**
  - 1-minute tour of poster
  - Handouts
Sample contents

Title
Authors, Affiliations, (e-mail)

Abstract
ca. 100 words

Introduction
- Background (previous research)
- Current study (hypothesis)

Method
Experiment design & techniques
- Participants
- Stimuli
- Procedure
- Measurements

Results
- Summary of results (bullet points)
- Use average data, show group comparisons,
  - Use tables, graphs, diagrams, or pictures,
    (use captions: graphs etc. should stand alone)

Identification of English /r/ and /l/ by American and Japanese listeners

![Graph showing identification of English /r/ and /l/]

Reaction time (ms) in the ID of English /r/ and /l/ by American and Japanese listeners

<table>
<thead>
<tr>
<th></th>
<th>/r/</th>
<th>/l/</th>
</tr>
</thead>
<tbody>
<tr>
<td>American</td>
<td>567</td>
<td>550</td>
</tr>
<tr>
<td>Japanese</td>
<td>1245</td>
<td>1400</td>
</tr>
</tbody>
</table>

Conclusions
- Interpretation of findings, in context of previous research, & hypothesis
- Concluding sentence

References & Acknowledgments

Wang
Evaluating the 'Critical Period' Hypothesis: Perceptual Learning of Mandarin Tones in American Adults and American Children at 6, 10 and 14 Years of Age

Abstract

We examined the perceptual learning of Mandarin lexical tones by American adults, and children from 6 to 14 years old, covering the age range surrounding the 'Critical Period'. The participants received a 2-week computerized Mandarin tone training program. The results showed that, for the trainees in each of the four age groups, percent correct identification increased from the pre-training to the post-training tests, indicating significant improvement across age groups. However, comparing the pre-puberty and post-puberty groups, we did not find an abrupt decrease in the degree of improvement, as would have been predicted by the Critical Period Hypothesis (CPH). These results support the view that language learning is not a strictly timed developmental process with rigid cutoff periods.

Results

% Correct responses at pre/posttest

<table>
<thead>
<tr>
<th></th>
<th>6 yr</th>
<th>10 yr</th>
<th>14 yr</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posttest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Performance during training

Conclusions

- Improvement in tone ID for all trained groups
- 6 yr: 6%; 10 yr: 9%; 14 yr: 0%; Adult: 9%
- Across age groups, comparable:
  - degree of improvement
  - performance during training
  - tone confusion patterns

Further studies

Brain activation patterns in tone learning across age groups: fMRI study

- Pre-training scan -> training -> Post-training scan
- Preliminary results:

Wang et al.
PHONETIC AND MATHEMATICAL PROCESSING IN NATIVE AND SECOND LANGUAGE

Background
- Previous research: Exact calculation is language-dependent and transferred with difficulty to a different language, (e.g., 
  
- The present study: examined how second language (L2) learners process mathematical problems and phonetic contrasts in their native language (L1) and in an L2.
- Questions addressed: whether language-related brain areas are used when completing mathematical tasks, how brain activation patterns differ in mathematical and phonetic processing, whether L2 users employ the same or alternative pathways to perform mathematical operations in L1 and L2, and how that differs from phonetic processing in the two languages.

Method

- Participants: 18 native speakers of Mandarin Chinese
  - Mean age of English learning: 12 years old, mean length of residence in the US: 6 years
- Stimuli and behavioral task

Scanning
- Event-related fMRI
  - Run 1: English; Run 2: Mandarin; Run 3: English; Run 4: Mandarin (counter-balanced)
  - Timing per run:
    - Image acquisition: 1.5 T GS, TR = 3, TE = 32ms; volumes = 118; slices = 21; Slice thickness = 4mm, gap size = 3mm; Flip angle: 60; FOV: 194x194mm
- Analysis
  - Behavioral: Correct responses and reaction time;
  - Imaging: (SPM99):
    - multivariate statistical analysis, significant activation @ p < .01
    - Regions of activation: anatomical and functional areas
    - Magnitude of activation: number of activated voxels

Overview of results
- Behavioral results:
  - The Chinese participants responded to the Mandarin (L1) tasks more accurately and with shorter reaction times than to the English (L2) tasks.

Conclusions
These findings suggest that the interaction between language and mathematical operations employs a specific brain network when associated with L2.

Wang et al.
Generalization in Japanese /i/-/I/ Perception: Shining a Light on the Right Cue
Eric M. Ingvalson, Lori L. Holt, James L. McClelland
Department of Psychology and Center for the Neural Basis of Cognition Carnegie Mellon University

Hypothesis: Focusing Japanese speakers on F3 should lead to improved identification and discrimination in both old and novel contexts.

Stimulus Materials

- Four continuous vowel CV series (i: [ai], ei, ai, 0, and I: [ai], ei, ai, 0) were created using the SPS (128 Hz) synthesizer.
- Within a CV series, only F1 varied in 12 equal steps between 400 Hz to 1400 Hz.

Procedure of 1 repetition of each of the 125 sentences (old: 125, new: 125) with stimuli presented in English. Participants were asked to indicate whether the vowel in the sentence was /i/ or /I/.

Method and Results

- Two groups of native Japanese-speaking women were selected: one group trained on stimuli number 1 and 2 and another trained on stimuli 3 and 4.
- Within each group, there were two people trained on stimuli 1 and 2, two on stimuli 3 and 4.
- Four native Japanese-speaking men were eliminated based on high performance in an eligibility task.
- Participants came in for a pretest, a main test, and a posttest.
- Four days elapsed between each test, during which participants trained on an identification task with feedback for 50 minutes a day, for a total of 4,000 training trials.

Results:

- Identification curves for the second group of participants trained on stimuli 3 and 4 are significantly lower than for those trained on stimuli 1 and 2.

Discussion

- Native Japanese speakers are insensitive to F3 in a /i/-/I/ context, even after extensive training.
- This contrasts with findings from English speakers, which show that F3 provides a significant cue for vowel perception.
- Possible reasons for this discrepancy and ways to train native Japanese to rely on F3 will be explored in future investigations.

References

Lip Shape During Speech by Adult Speakers and Children with Motor Speech Disorders

Kevin J. Reilly¹, Christopher A. Moore¹, Kathryn P. Connaghan¹, Thomas F. Campbell², Jordan R. Green³ & Roger W. Steeve¹

¹University of Washington, ²University of Pittsburgh, ³University of Wisconsin - Madison

Introduction

Background
- Accurate positioning of the lips during speech production is essential for the realization of the acoustic goals of phoneme production (Sayers, 1998). Small changes in the shape of the flap during lip-rounding, however, have predictive acoustic consequences that are important in production of vowels, glides, and lateral sounds.
- Analysis of EMS records during speech indicates that muscular activity across the general area is not highly concentrated. This may suggest a high degree of complexity in the movement of lips during speech.

Method

Subjects
- Three children with diagnosed motor speech disorders and three adults.

Results & Discussion

Figure 1: Shows average coefficient values across utterance segments for all 10 subjects.

- Significant differences were observed in lip movements between the two groups.

- The children with motor speech disorders demonstrated greater variability in lip movements during the utterance segments.

- The adult group showed more consistent lip movements across the utterance segments.

- Differences in lip movements may be related to the specific motor speech disorder present in the children.

References


Acknowledgments

The authors would like to acknowledge the assistance of [Sponsor's Name], [Sponsor's Name], and [Sponsor's Name]. This work was supported by the [Sponsor's Name] and the [Sponsor's Name].

Reilly et al.