Effect of Multimodality Cueing on Lexical Retrieval in Aphasic Speakers

A master's thesis conducted by
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Why Anomia? Why Cueing?

• Anomia is the pervasive deficit across all subtypes of aphasia
• It is important to speech-language pathologists to employ the most facilitative treatment strategies to remediate word-finding difficulties in these patients
• Cueing, specifically, semantic (SCT), phonologic (PCT) and gestural cueing strategies, have been shown to improve naming abilities in aphasics
• No study has combined SCT and PCT with gestural cueing to determine which combinations are most effective

Hypothesis

• Based on Dell et al.'s model of lexical retrieval, it was predicted that:
  - Enhancing the first level of processing, i.e. the semantic level will increase the chances of activating the correct phonologic nodes in the 2nd level of processing, thus increasing naming accuracy
  - SCT will be more effective than PCT and the combination of iconic gestural cueing with both of these techniques will be the most effective
  - Iconic gestural cueing is adding more semantic information and another modality of input

Methods

• 4 subjects
  - Subject 1 diagnosed with anomia aphasia
  - Subject 2 diagnosed with Broca’s aphasia
  - Subject 3 diagnosed with Wernicke’s aphasia
  - Subject 4 diagnosed with Conduction aphasia
• Using a multiple baseline, counterbalanced design, each subject underwent the following treatment conditions: SCT, PCT, S+GCT and P + GCT
• Gestures used in treatment were those that were generated by the subjects themselves. If a subject could not generate a gesture for a particular word, one was modeled for them by the examiner
• Baseline lasted 2 days, treatment 11 days (or until criterion was met) and follow-up 2 days on two consecutive weeks following the conclusion of the treatment stage
• Session duration ranged from 25 minutes to an hour
• Subjects named a minimum of 25 pictures per session

Cueing Hierarchies

<table>
<thead>
<tr>
<th>SCT Hierarchy</th>
<th>PCT Hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>Cue</td>
</tr>
<tr>
<td>1</td>
<td>Picture of target presented, naming response requested, verbal feedback provided</td>
</tr>
<tr>
<td>2</td>
<td>Picture of target presented, naming response requested, visual feedback provided, visual feedback provided</td>
</tr>
<tr>
<td>3</td>
<td>Picture of target presented along with picture of first phoneme of target word, naming response requested, visual feedback provided, visual feedback provided</td>
</tr>
<tr>
<td>4</td>
<td>Picture of target presented along with a visual sentence completion phrase that included the target word</td>
</tr>
<tr>
<td>5</td>
<td>Picture of target presented along with a visual sentence completion phrase that included the target word and repetition of target word repeated</td>
</tr>
</tbody>
</table>

S+GCT: When gestural cueing was combined with this approach, the gesture was performed by the examiner while the cue was added to the cues in the hierarchy

P+GCT: When gestural cueing was combined with this approach, the gesture was performed by the examiner while the cue was added to the cues in the hierarchy

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Discussion

- All subjects increased naming abilities over the course of the study
- Individuals with:
  - Anomic aphasia benefit most from PCT and S+GCT
  - Broca’s aphasia benefit most from SCT and P+GCT
  - Wernicke’s aphasia benefit most from S+GCT and P+GCT
- Exposure led to an increase in naming accuracy for all of the subjects
- Phonological cues led to faster retrieval of a specific word than semantic cues; that is, the word was accurately retrieved earlier in the cueing hierarchy in PCT rather than in the SCT hierarchy

Clinical Implications

- When treating word finding with aphasic patients clinicians can use these results to determine which cues will be most facilitative.
- Expose clients to many words and naming opportunities to promote lexical retrieval, in addition to direct speech and language treatment!
- Starting Points in Cuing Therapy based on Type of Aphasia
  - Anomic Aphasia
    - PCT and S+GCT
  - Broca’s Aphasia
    - SCT and P+GCT
  - Wernicke’s Aphasia
    - PCT and S+GCT
  - Conduction Aphasia
    - S+GCT and P+GCT

References