Word Retrieval Treatment Using Collaborative Referencing

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Collaborative Referencing is the process through which people work together, using past knowledge and experiences, to establish a shared perspective (Clark and Wilkes-Gibbs, 1986).

Collaborative Referencing tasks are barrier tasks that have been found to increase noun and verb retrieval in individuals with aphasia.
Collaborative Referencing Tasks

- Partners sit across from each other separated by a barrier.
- Both have a numbered board and a matching set of pictures.
- The object is for the director to name or describe picture cards so that the matcher can place pictures in the same sequence.
- When Collaborative Referencing tasks are used for treatment, the object is for the individual with aphasia to improve naming skills while serving as the director.
During collaborative referencing tasks partners typically progress through 3 phases:

- **Initiation**- first full phrase, includes detailed descriptions
- **Refashioning**- repairs, expansions, replacements
- **Acceptance**- both partners agree
Collaborative Referencing Studies

Clark and Wilkes-Gibbs (1986)
- Participants were 8 pairs of college students.
- Stimuli consisted of 12 Chinese Tangram figures.
- Number of words and conversational turns decreased across trials.
- Cards were placed with 98% accuracy.
- Separated by an opaque barrier.

Hengst (2003) study
- Patterned after Clark and Wilkes-Gibbs (1986).
- Studied collaborative referencing of nouns between individuals with aphasia and routine communication partners.
- Separated by a partial barrier
- Resulted in accurate card placement, simplification of initiating descriptions, and a decrease in collaborative effort across trials
- Partners made references from shared knowledge and history
Currently, there is a need to supplement traditional speech therapy to maximize effectiveness of techniques for treatment of word retrieval difficulties in individuals with aphasia.

The use of collaborative referencing tasks in therapy settings is a possible solution.
The purpose of this study was to determine if collaborative referencing could be used to increase word retrieval in individuals with nonfluent aphasia.

- Can participants with aphasia improve naming skills through collaborative referencing?

- Which cueing strategies are most effective for a participant when targeting naming skills?
  - Cueing strategies analyzed: gesture, phonemic, sentence completion, description, question

- Is the learning pattern for naming consistent with the collaborative referencing model?
Participant 1
- 72 year old male
- Nine years post onset CVA

Participant 2
- 84 year old female
- 6 years post onset CVA

Both Participants
- Aphasia Diagnostic Profiles Indicated nonfluent aphasia and below average scores on Boston Naming Test
- Communicated at conversational level
Research Design

- Multiple baseline across 2 subjects
- Independent Variables:
  - Collaborative Referencing Task and Cueing Strategies used by the partner
- Dependent Variables:
  - Number of correctly labeled verbs
  - Responses to partners’ cues
  - Adherence to the collaborative referencing model
Procedures

- Baseline was established at 30% accuracy for each card set.
- The routine communication partners were the participants’ spouses.
- Each session consisted of six trials.
- Correct responses included the targeted label and refashioned labels when the label had been accepted by the participant and the spouse.
Procedures

- Picture sets were considered trained when the participant named 8 out of 10 labels correctly over 2 trials.
- After criterion was met, the next picture set was targeted.
- Participant 2 remained in baseline until Participant 1 reached criterion on his or her first card set.
- To assess carryover, each picture set was reintroduced and criterion reestablished.
Setup
Mean Number of Correct Responses

Card Set 1

Mean Number of Correct Responses

Session Number

Baseline

Participant 1
Participant 2
Card Set 2

Mean Number of Correct Responses

Session

Mean Number of Correct Responses

Participant 1 - Participant 2
Mean Number of Correct Responses

Card Set 3

![Graph showing the mean number of correct responses for Participant 1 and Participant 2 over sessions. The x-axis represents the session numbers, and the y-axis represents the mean number of correct responses. The graph shows a trend where Participant 2's responses increase over sessions, while Participant 1's responses remain relatively constant.](image-url)
Criterion was met for all 3 verb picture sets.

The number correct for each picture set increased across sessions.

Across all picture sets for both participants, the number of correct verb labels on the first trial when a set was re-introduced was greater than the initial baseline for that picture set.
### Mean Number of Partner Cues and Mean Number of Correct Responses to Cues

#### Participant 1

<table>
<thead>
<tr>
<th>Cue Type</th>
<th>Partner Cues</th>
<th>Correct Responses</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>.7 (1.33)</td>
<td>.4 (.70)</td>
<td>1.00</td>
<td>.000</td>
</tr>
<tr>
<td>Phonemic</td>
<td>1.1 (2.81)</td>
<td>.7 (1.57)</td>
<td>1.00</td>
<td>.000</td>
</tr>
<tr>
<td>Sentence Completion</td>
<td>.4 (.70)</td>
<td>.4 (.70)</td>
<td>1.00</td>
<td>.000</td>
</tr>
<tr>
<td>Question</td>
<td>1.8 (1.03)</td>
<td>1.2 (1.69)</td>
<td>.91</td>
<td>.000</td>
</tr>
<tr>
<td>Gesture</td>
<td>.7 (.95)</td>
<td>.5 (.71)</td>
<td>.86</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: $r =$ Spearman Correlation, $p =$ significance level, Standard Deviations in parenthesis
## Mean Number of Partner Cues and Mean Number of Correct Responses to Cues

### Participant 2

<table>
<thead>
<tr>
<th>Cue Type</th>
<th>Partner Cues</th>
<th>Correct Responses</th>
<th>$r$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>.71 (1.14)</td>
<td>.42 (.65)</td>
<td>.98</td>
<td>.000</td>
</tr>
<tr>
<td>Phonemic</td>
<td>1.15 (2.65)</td>
<td>.71 (1.38)</td>
<td>.99</td>
<td>.000</td>
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<tr>
<td>Sentence Completion</td>
<td>0</td>
<td>0</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Question</td>
<td>.79 (.97)</td>
<td>.64 (.74)</td>
<td>.78</td>
<td>.001</td>
</tr>
<tr>
<td>Gesture</td>
<td>.28 (.83)</td>
<td>.15 (.53)</td>
<td>.73</td>
<td>.001</td>
</tr>
</tbody>
</table>

Note: $r$ = Spearman Correlation, $p$ = significance level, Standard Deviations in parenthesis
Significance of Cueing Types

- Participants in this study benefited from all types of cueing provided.

- Data showed all types of cues were statistically beneficial for both participants.
Adherence to the Collaborative Referencing Model

- Participants followed the Collaborative Referencing Model to come to an agreement on all Picture Card labels they did not initially agree on.
- Participant 1 followed the model for a total of 4 pictures.
- Participant 2 followed the model for a total of 5 pictures.
The participants in this study made gains in verb retrieval across each session.

Gains were shown to be maintained when picture sets were reintroduced, suggesting that the participants learned and remembered the verb labels in the context of the collaborative referencing task.

In situations in which therapy sessions are limited, this model may be an important way to supplement services provided by the speech language pathologist.
References


References