Aphasia Group Treatment: Effects of Environmental Props on Communication

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Rationale

- Few studies have investigated the effect of a contextually rich environment in an aphasia group setting.
- Wertz et al. 1981
  - One of the fundamental research efficacy studies on group and individual treatment with persons who have aphasia.
- Elman & Bernstein-Ellis (1999a)
  - Efficacy study of group communication treatment with persons who have chronic aphasia.
  - Impact of contextual information on conversational behaviors with severe aphasia.
Research Questions

Do environmental props affect:

1) Correct Information Units (CIU’s) produced (Nicholas & Brookshire 1993);
2) Turn taking interchanges produced; and
3) The frequency and type of modality used by persons with aphasia?
## Method

### Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Age</th>
<th>WAB AQ</th>
<th>Aphasia Type</th>
<th>Hearing Screening</th>
<th>Other Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>M</td>
<td>55</td>
<td>33.9</td>
<td>Wernicke’s</td>
<td>100%</td>
<td>None</td>
</tr>
<tr>
<td>N1</td>
<td>M</td>
<td>65</td>
<td>72.5</td>
<td>Broca’s</td>
<td>90%</td>
<td>AOS</td>
</tr>
<tr>
<td>N2</td>
<td>M</td>
<td>76</td>
<td>31.5</td>
<td>Broca’s</td>
<td>HA</td>
<td>AOS</td>
</tr>
<tr>
<td>N3</td>
<td>M</td>
<td>66</td>
<td>27.5</td>
<td>Broca’s</td>
<td>80%</td>
<td>AOS</td>
</tr>
</tbody>
</table>
# Materials

<table>
<thead>
<tr>
<th>Standard Treatment Materials</th>
<th>Added Environmental Props (travel)</th>
<th>Added Environmental Props (food)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>Passport</td>
<td>Plates</td>
</tr>
<tr>
<td>Pencils</td>
<td>Plane tickets</td>
<td>Spoons</td>
</tr>
<tr>
<td>Visual alphabet (typed)</td>
<td>Pictures:</td>
<td>Knifes</td>
</tr>
<tr>
<td>Markers</td>
<td>New York City</td>
<td>Bowls</td>
</tr>
<tr>
<td>Large white board</td>
<td>NC</td>
<td>Cooking Pans</td>
</tr>
<tr>
<td></td>
<td>Boston</td>
<td>Napkins</td>
</tr>
<tr>
<td></td>
<td>CDA</td>
<td>Menus:</td>
</tr>
<tr>
<td></td>
<td>Brochures:</td>
<td>Cyrus O'Leary's</td>
</tr>
<tr>
<td></td>
<td>Hawaii</td>
<td>Kaylan Garden</td>
</tr>
<tr>
<td></td>
<td>Caribbean</td>
<td>Denny’s</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>Rocky Riccoco’s</td>
</tr>
<tr>
<td></td>
<td>Mexico</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maps:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>United States</td>
<td></td>
</tr>
<tr>
<td></td>
<td>World</td>
<td></td>
</tr>
</tbody>
</table>
Procedure

- Single-subject time series design.
- The study took approximately four weeks; eight sessions.
- One orientation session; seven sessions that were analyzed.
Data Analysis

Viewed and coded seven 20 minute segments
↓
Totaled all measures collected
↓
Entered totals into database for Excel
Pivot Chart
↓
Printed charts and visually inspected
For trends, totals, and comparisons for results
Results

No. Correct Information Units (CIUs)

Sessions

baseline 1
baseline 2
baseline 3
travel (no props)
travel (props)
food (props)
food (no props)

N2

CIU
Results

N1

Sessions

F1

Sessions

No. Correct Information Units (CIUs)

 baseline 1  baseline 2  baseline 3  travel (no props)  travel (props)  food (no props)  food (props)

No. Correct Information Units (CIUs)

 baseline 1  baseline 2  baseline 3  travel (no props)  travel (props)  food (props)  food (no props)
Results

<table>
<thead>
<tr>
<th>Sessions</th>
<th>No. of Total Turn Taking Interchanges</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 baseline</td>
<td>N2 - Response 20</td>
</tr>
<tr>
<td>2 baseline</td>
<td>N2 - Response 21, N2 - Repair/Revise 4</td>
</tr>
<tr>
<td>3 baseline</td>
<td>N2 - Initiations 9, N2 - Repair/Revise 4</td>
</tr>
<tr>
<td>4 travel (no props)</td>
<td>N2 - Initiations 9, N2 - Feedback 1</td>
</tr>
<tr>
<td>5 travel (props)</td>
<td>N2 - Initiations 9, N2 - Feedback 1</td>
</tr>
<tr>
<td>6 food (props)</td>
<td>N2 - Initiations 9, N2 - Feedback 1</td>
</tr>
<tr>
<td>7 food (no props)</td>
<td>N2 - Initiations 9, N2 - Feedback 1</td>
</tr>
</tbody>
</table>
Results

Total No. of Modality Used

Sessions

1 baseline 2 baseline 3 baseline 4 travel (no props) 5 travel (props) 6 food (props) 7 food (no props)

N2

Gesture - N2
Verbalization - N2
Vocalization - N2
Writing - N2
Did environmental props affect CIUs, turn taking interchanges, and modality used in our participants?

No, not really.....
Correct Information Units (CIU’s)

**No Difference**
- There was no clinically significant differences in CIUs produced by any participant.

Turn Taking Interchanges

**No Difference – excluding 1 participant**
- The effects of added environmental props on turn talking interchanges for all participants were undistinguishable excluding N2.

Modality

**No Difference**
- The effects of added environmental props on modality used for all participants was undistinguishable between the sessions with and without props.
Discussion

- Sensitivity of Measures for identifying the effect of environmental props.
  - CIUs
  - Turn taking interchanges
  - Modality used
Discussion cont.

- Communication partners
  - Familiarity
  - Personality
Discussion cont.

- Additional environmental props
  - Novel props
  - Overwhelming
Questions...

References