Narratives in ASD: Impact of Condition & Type of Support

Jennifer Blitsch, B.A.
Eastern Illinois University

Allison M. Haskill, Ph.D., CCC-SLP
Augustana College

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Introduction

- Successful oral narration requires the use of multiple linguistic and nonlinguistic skills
  - grammatical construction
  - story grammar/structure
  - cohesion
  - organization
  - (McCabe & Bliss, 2003)

- Children with impaired language, including those with autism spectrum disorder (ASD), have been observed to have significant deficits in oral narration (Capps, Losh, & Thurber, 2000).
Narratives in the ASD Population

- Previous studies:
  - older, school-age participants
  - specific skills (e.g., theory of mind)
    - (e.g., Craig & Baron-Cohen, 2000)

- Little information on narrative condition and types of support for individuals with ASD

- Useful for clinical decision-making
Purpose

- To investigate the impact of narrative condition and support type in oral narratives in young children with ASD.
- To determine if, across narrative measures and tasks, ASD participants differed from their age and gender-matched, typically-developing (TD) peers.
Research Questions

1) What are the narrative performance patterns for ASD and typically-developing (TD) groups, by condition/support type?

2) For each of the three narrative measures, does narrative performance differ based on narrative condition (personal vs. retelling)?

3) Do children with ASD and TD have significantly different narrative performance on narrative measures across narrative conditions and support types?

4) Does visual support impact performance on a narrative-related comprehension task?
## Participants

<table>
<thead>
<tr>
<th>Group</th>
<th>n (boys, girls)</th>
<th>M age (Range)</th>
<th>M language scores (CELFP2 or CELF 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASD</td>
<td>6 (3, 3)</td>
<td>5.35 (3;7-7;0)</td>
<td>80</td>
</tr>
<tr>
<td>TD</td>
<td>6 (3, 3)</td>
<td>5.34 (4;3-6;11)</td>
<td>104</td>
</tr>
</tbody>
</table>
Procedures

- CELF-P2/CELF-4

- Narrative phase
  - 6 narratives (3 personal + 3 story retelling)
  - Semi-structured, consistent examiner prompts to ensure each narrative was at least 15 utterances in length (see future slide/handout)

- Thirty total narrative-related comprehension questions (5 questions for each of the 6 narratives).
Narrative Conditions

- Personal narratives
  - Grocery store, holiday celebration, hobbies

- Retelling narratives
  - “Carl” series
Narrative Supports

- Visual
  - Pictures
- Auditory
  - Audio recorded example stories
- Visual and Auditory
## Examiner Prompts

<table>
<thead>
<tr>
<th>Examiner Prompt</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral/expectant look</td>
<td>Neutral Comment</td>
<td>“Mhm”, “Wow”, “Neat”</td>
</tr>
<tr>
<td>Expansion request</td>
<td>Examiner requests that the participant expands their answer</td>
<td>“Tell me more about your birthday party”</td>
</tr>
<tr>
<td>Sequence prompt</td>
<td>Examiner asked about the sequence of the story</td>
<td>“What happened next?”</td>
</tr>
<tr>
<td>Cloze</td>
<td>Examiner pauses and allows child to complete the utterance</td>
<td>“Carl got a bone and a &lt;pause&gt;.”</td>
</tr>
<tr>
<td>Negation/counterpoint</td>
<td>Examiner says opposite of the participant’s utterance</td>
<td>C “The dog was happy.” E “The dog was sad.”</td>
</tr>
<tr>
<td>Repeating Child</td>
<td>Examiner repeats participant’s utterance with an intonation cue</td>
<td>C “I rode a bike.” E “You rode a bike?”</td>
</tr>
<tr>
<td>Other</td>
<td>Questions or any other prompt that does not fall into the previous categories</td>
<td>“Where was your birthday party?”</td>
</tr>
</tbody>
</table>
Measures of Narrative Quality

- Length of narrative (# of utterances, T-Units)
- % grammatically complex utterances
- Number of story grammar elements:
  - Setting
  - Initiating events
Question 1: What are the narrative performance patterns for ASD and typically-developing (TD) groups, by condition/support type?
Results: *Narrative Length* (# of utterances)
Results: Mean % Grammatically Complex Utterances
Results: *Mean # Story Grammar Elements*

![Bar chart showing mean number of story grammar elements across different categories for ASD and TL groups.](chart.png)

- Personal/Visual
- Personal/Audio
- Personal/Visual and Audio
- Retelling/Visual
- Retelling/Audio
- Retelling/Visual and Audio

Legend:
- ASD
- TL
Question 2: For each of the three narrative measures, does narrative performance differ based on narrative condition (personal vs. retelling)?
Results: Question 2

- No significant difference between the conditions for length or grammatical complexity.

- Both groups used significantly more story grammar elements in their retelling narratives than their personal narratives.
Question 3: Do children with ASD and TD have significantly different narrative performance on narrative measures across narrative conditions and support types?
## Results: Question 3

<table>
<thead>
<tr>
<th>Measure</th>
<th>ASD M (SD)</th>
<th>TD M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (# utterances)*</td>
<td>37.06 (12.96)</td>
<td>29.37 (10.97)</td>
</tr>
<tr>
<td>Grammatical complexity * (% GC utt.)</td>
<td>10.00 (8.8)</td>
<td>20.00 (12.2)</td>
</tr>
<tr>
<td>Story grammar</td>
<td>18.78 (9.77)</td>
<td>21.39 (10.67)</td>
</tr>
</tbody>
</table>
Question 4: Does visual support impact performance on a narrative-related comprehension task?
Results: Question 4

- **ASD group:**
  - visual support (53% accuracy)
  - no visual support (30% accuracy)

- **TD group:**
  - visual support (84% accuracy)
  - no visual support (80% accuracy)
Discussion

- Participants with ASD produced longer narratives with less grammatical complexity.
- Identifying support levels and conditions that result in optimal performance may be one way to improve intervention outcomes for children with ASD.
- ASD participants had higher performance during retelling narratives vs. personal narratives.
  - theory of mind/ perspective-taking deficits
ASD and TD participants had increased narrative quality when visual support only was used for narratives

- Surprising finding!

ASD participants performed better on narrative-based comprehension questions with visual support
Future Directions

- Higher number of ASD and TD participants
- Incorporate additional narrative measures
- Include children with a broader spectrum of ages
References

