## Language and Context in Children with High Functioning Autism

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### Background

**Discourse & Task Demands**
- Processing demands are considered to increase from conversation to narration to expository tasks (Nippold et al., 2005; Thordardottir, 2008)
- For children with specific language impairmet (SLI) and typical development (TD): task demands ⇒ MLU, syntactic complexity but accuracy, speech disruptions (Gleaschmidt & Miller, 1992; Reuterskiöld-Wagner et al., 2005; Thordardottir, 2008)
- Few studies have explored task effects in children with high functioning autism (HFA) (Lott & Capone, 2003)

**Speech Disruptions**
- Often interpreted as signs of monitoring, detecting and repairing language and/or speech errors (Lubow, 1990; Pradella & Kolk 1992)
- May also serve a pragmatic function such as holding the floor or signal to the listener that there is a problem (Darlow, 1994; 2002; Johnson, 2002; Stillman, 1997)
- One study indicates: repetitions and revisions, no filled pauses in HFA compared with TD in a play context (Epstein, 2005)

**Children’s Communication Checklist-2**
- A standardized parent checklist used to assess pragmatic competence and help identify children with autism, SLI and PLI (Bishop, 2003; Norbury, Nash, Bost & Bishop, 2004)
- Contains 70 items divided into 10 scales:
  - 4 Language structure scales
  - 4 Pragmatic scales
  - 2 Autism scales

### Method

**Participants**
- 14 children, grade 2-3, 7-1 - 9.5 years old
- Standard score > 85 on both Test of Language Development & Test of Non-Verbal Intelligence (TOLD-P4: Newcomer & Hammill, 2008; TOLD-H: Hammill & Newcomer, 2008; TONI-3: Brown, Sherbenou, & Johnsen, 1997)
- Children with HFA were diagnosed with the ADOS (Lott et al., 1999)

**Procedures**
- 2 sessions with standardized testing and narrative tasks:
  - Conversation: Structured interview about family, interests and events
  - Expository task: The child explains how to play a game or sport (Nippold et al., 2005)

**SALT Analyses**
- Transcriptions were segmented into C-units, coded and analysed in SALT (Systematic Analysis of Language Transcripts: Miller & Chapman, 2004)
- MLU (mean length of C-unit)
- Speech disruptions:
  - Filled pauses and filler words;
  - Silent pauses >2 s within speech turn;
  - Repetitions of part word, word or part of utterance;
  - Revisions/Repairs at syllable, word and utterance level.
- Grammatical errors: omitted obligatory morphemes or words and word or utterance level errors (Gleaschmidt & Miller, 1992)

### Results

**Comparisons: Conversation & Expository Task in Children with TD and HFA**

<table>
<thead>
<tr>
<th></th>
<th>Mean Length of C-unit in Words</th>
<th>Speech Disruptions (all types) / C-unit</th>
<th>Revisions and Repairs / C-unit</th>
<th>Uncorrected errors / C-unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TD (N=8)</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Age (SD)</td>
<td>105.0 (10.9)</td>
<td>105.6 (14.4)</td>
<td>103.5 (16.6)</td>
<td>20.50*</td>
</tr>
<tr>
<td>TOLD-P4 (SD)</td>
<td>53.2 (10.15)</td>
<td>100.2 (15.10)</td>
<td>103.5 (16.66)</td>
<td>101.0 (15.5)</td>
</tr>
<tr>
<td>TOLD-H (SD)</td>
<td>9.2 (1.73)</td>
<td>100.1 (16.58)</td>
<td>103.6 (18.11)</td>
<td>7.5 (1.93)</td>
</tr>
<tr>
<td>HFA (N=6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (SD)</td>
<td>103.5 (15.64)</td>
<td>103.0 (15.66)</td>
<td>20.50*</td>
<td>101.0 (15.5)</td>
</tr>
<tr>
<td>TOLD-P4 (SD)</td>
<td>53.2 (10.15)</td>
<td>102.8 (19.70)</td>
<td>103.5 (16.66)</td>
<td>103.5 (16.66)</td>
</tr>
<tr>
<td>TOLD-H (SD)</td>
<td>9.2 (1.73)</td>
<td>100.1 (16.58)</td>
<td>103.6 (18.11)</td>
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</tr>
</tbody>
</table>

*significant differences between groups p<0.05

No significant differences between the two groups, but significant differences between the two contexts in each group.

### Discussion & Conclusions

**Task Related Effects**
- No significant differences in task related effects between TD children and children with HFA.
- Longer C-units and significantly more speech disruptions in expository context for both groups.
- A higher number of revisions in the expository task in both groups (n.s. for HFA), but no difference in number of errors.
- Small samples and large variability in HFA group.

**Speech Disruptions & Pragmatic Skills**
- A positive relationship between pragmatic skills and rate of fillers in conversation supports the notion of pragmatic function of fillers.
- S7 of the children with poor pragmatic skills showed longer total silent pause time in conversation than other children.
- Some children with high scores on standardized language measures but poor pragmatic skills had a higher rate of uncorrected errors than children with good pragmatic skills.

**Future Directions**
- More children and pair-wise matching (HFA-TD).
- Two more discourse contexts: narration to pictures and personal narration will be analyzed.
- Compare with a third group of children with SLI.
- Continued study of the relationship between core language skills and pragmatic skills in different discourse contexts across clinical categories of children (Nyborg & Bishop, 2005).

### Questions

1. Do task-related effects on language production differ between children with HFA and TD children in:
   - length of C-units;
   - fluency;
   - grammatical accuracy?
2. Is there a relationship between pragmatic competence as measured by the CCC-2 and types of speech disruptions and errors in conversation?
References


