Disfluency in Autism Spectrum Disorders: Treatment Considerations for the Clinician

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Questions we will not answer, but wish we could

- What is the prevalence of stuttering/disfluency among the Autism Spectrum Disorder (ASD) population?
- What is the prognosis for treating children who stutter with concomitant ASD?
- If some reactive behaviors in stuttering reflect efforts to escape or avoid stuttering, would these behaviors be rare in children with limited perspective taking (Theory of Mind)?
- And many, many others....
Our Goal Today

- Summarize the limited research to date related to fluency/disfluency in children with ASD.
- Speculate about the nature of these disfluencies based on current research and our combined clinical experience.
- Provide you with a framework to develop an effective evaluation and treatment plan that is based in the literature as much as it can be.
- Offer some examples from case histories to demonstrate considerations for treatment for some cases of concomitant disfluency and ASD.
What motivated this topic

☐ Lack of research
  ■ Children with ASDs and disfluency/stuttering

  And yet....

☐ Clinical observations regarding disfluency in ASDs
  ■ Our own
  ■ Recent increased questions and observations on online discussion groups (Divisions 1, 16)
Types of Disfluencies

- **Stuttering-like disfluencies**
  - Single syllable whole word repetitions (I, I, I)
  - Sound, syllable repetitions (b-b-baby; may-may-, maybe)
  - Prolongations (sssssometimes)
  - Blocks

- **Non stuttering-like disfluencies**
  - Multisyllable whole word repetitions (under, under)
  - Phrase repetitions (I want, I want some juice)
  - Revisions (I want apple, no, I mean orange juice)
  - Fillers, interjections (um, uh, well, like)
Background and Theoretical Perspective

- What we know about language, disfluency and children with ASDs (Dobinson, Perkins, & Boucher, 1998; Paul et al., 2005; Shriberg et al., 2001; Szatmari, 1991; Tager-Flusberg, 1995)

Patterns of stuttering/disfluency noted in individuals with Autism Spectrum Disorders

- Klin, Volkmar, Sparrow (2000): “Dysfluencies are...common” (p. 378) in Asperger Syndrome” (AS)
- Shriberg et al. 2001: 67% male speakers with AS and 40% with HFA: “inappropriate or nonfluent phrasing on more than 20% of utterances” (p. 1109)
  “These data suggest that many speakers with autistic syndromes produce notably disfluent speech” (p. 1109)
Patterns of stuttering/disfluency noted in individuals with Autism Spectrum Disorders

- Typical stuttering-like disfluencies
  - Sound, syllable, word repetitions (Hietella & Spillers, 2005; Paul et al. 2005; Scott, Grossman, Abendroth, Tetnowski & Damico, 2006; Shriberg et al. 2001; Sisskin, 2006)
  - Prolongations (Paul et al., 2005; Shriberg et al., 2001)
  - Blocks (Paul et al., 2005; Scott et al., 2006; Shriberg et al., 2001)
Patterns of stuttering/disfluency noted in individuals with Autism Spectrum Disorders

Less typical stuttering-like disfluencies

What are typical locations?

- Word final disfluencies (Hietella & Spillers, 2005; Sisskin, 2006)
- Word-medial blocks (Scott et al., 2006)
- Mid syllable insertion (“see-hee”) (Sisskin, 2006)
Patterns of stuttering/disfluency noted in individuals with Autism Spectrum Disorders

- Typical NON stuttering-like disfluencies
  - Multisyllable whole word repetitions (possibly Paul et al. 2005; Scott et al., 2006; Shriberg et al., 2001)
  - Phrase repetitions (Scott et al., 2006; Sisskin, 2006)
  - Revisions (Hietella & Spillers, 2005; Paul et al., 2005; Shriberg et al., 2001; Sisskin, 2006)
  - Interjections (Hietella & Spillers, 2005; Scott et al., 2006; Sisskin, 2006)
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  - Interjections (Hietella & Spillers, 2005; Scott et al., 2006; Sisskin, 2006)
To sum up

- What we know so far
  - Disfluency (more and less typical) and stuttering (more and less typical) happen in Autism Spectrum Disorders
  - The same patterns have been seen in different individuals in the contexts of reading (Hietala & Spillers, 2005; Scott et al., 2006) repetition tasks (Scott et al., 2006) and conversation (Dobbinson, Perkins, Boucher, 1998; Hietala & Spillers, 2005; Paul et al., 2005; Scott et al., 2006; Shriberg et al, 2001; Sisskin, 2006) but there are individual differences as well
  - Awareness seems to be on a continuum
To sum up

- Where the need for more research is:
  - Small study sizes (most 1-3 participants, largest had 30 participants)
  - All studies were descriptive in nature regarding disfluencies
  - Many focus on overall quality of speech rather than fine details of disfluencies
  - Need more information to see how much overlap there is between the type of ASD and type of disfluencies seen, if any; This can be tricky, given diagnostic difficulties
Assessment: *What* we want to know about the individual and *Why*

Cognitive level (Van Borsel and Tetnowski, 2007)

Age of onset of stuttering

Other presenting issues, such as language issues
Assessment Considerations:

*What* we want to know about the disfluencies and *Why*

- **Linguistic contexts** of disfluencies (more and less taxing—do the disfluencies change with context?)
- **Types** of disfluencies (non and stuttering-like, typical and atypical)
- **Locations** of disfluencies (typical or atypical)
- **Durations** of disfluencies
Assessment Considerations

- Awareness of disfluencies
- Responses to disfluencies
- Impact of disfluencies on overall communication effectiveness
- Other related behavioral patterns (e.g. perseveration, interaction style, etc.)
Example #1

- Age: 8
- Autistic Disorder
- Clip at onset and 3 months post onset
- Notable features of communication
  - SLD (up to 15-20 iterations.
  - Physical concomitant behaviors: lowering head; jerking torso
  - No awareness
  - Imitated(echolalia and scripts) and some spontaneous utterances (requests).
Example #2

- Age: 7
- Asperger’s Syndrome
- Notable features of communication:
  - Initial part-word repetition
  - Final part-word repetition (with and without mid-syllable insertion)
  - Revision; phrase repetition
  - No awareness
  - Monologue on narrow circumscribed interest
  - Scripted language
  - Unusual prosody, pitch, volume
Example #3

- Age: 16
- Asperger’s Syndrome
- Notable features of communication
  - Final part-word repetition (with and without mid-syllable insertion)
  - Interjections
  - Pedantic, intellectualized manner
  - No awareness (defensive)
Example #4

- Age: 20
- Autistic Disorder with intellectual impairment
- Stereotypical behavior; compulsive rituals
- Notable Features of Communication
  - Whole word repetition
  - Part-word repetition
  - Strings of both (above) with variation on sound production.
  - No awareness
  - One- and two-word utterances for behavior regulation (requesting & protesting). Disfluency mostly on highly motivated requests.
Treatment Considerations: What to Treat

- Impact on communication
  - Intelligibility
  - Distracts from intent/meaning

- Functional concerns
  - Impacts communication intent/function
  - Impacts learning (language, academic, prevocational)
  - Impacts socialization (home, school, community)

- Prognosis for best functional outcomes
  - Goals that make the greatest difference
Treatment Considerations: How to Treat

- The triad of symptoms and learning style associated with ASD
  - Behavioral approaches (Lord et al., 2001)
  - Concrete, rule-based, visual learners (Bellon-Harn et al., 2007; Quill, 1997)
- Hypothesis related to the nature of the symptoms (slides #23,24,25,27)
- Motivation
  - For change
  - For practice
Speculation and future research

- The link between engagement, self-regulation (executive functioning) and development of fluent speech
  - Gertner, Rice, & Hadley (1994); Prizant & Meyer (1993)
  - Greenspan (2001); Greenspan & Weider (1997)
- Treatment implications and case illustrations
Speculation and future research

- The link between linguistic level and development of fluent speech (Bernstein Ratner & Sih, 1987; Hartfield & Conture, 2006; Logan & Conture, 1995; Silverman & Bernstein Ratner, 2002; Wagovich & Bernstein Ratner, 2007; Yaruss, 1999; Zackheim & Conture, 2003)

    - Mazing behaviors; planning, retrieval (Hartfield & Conture, 2006; Pellowski & Conture, 2005; Hall 2004)

- Treatment implications and case illustration
Speculation and Future Research

- The link between core symptoms of ASD and less typical speech disfluency
  - “Restricted, repetitive, and stereotyped patterns of behavior (DSM-IV, 1994)
  - Palilalia, verbal perseveration, and compulsive repetition (Alm, 2004; Van Borsel et al., 2007; Stribling et al. 2007)
  - Verbal repetition strategies as a pragmatic function (Prizant and Duchan, 1981).

- Treatment implications and case illustration
Echo Breakdown
by Functional Categories
Adapted from Prizant & Duchan, 1981

<table>
<thead>
<tr>
<th>Functional Category</th>
<th>% of Category Relative to Total Echolalia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Summarized from 4 children</td>
</tr>
<tr>
<td>Non-focused</td>
<td>3.97</td>
</tr>
<tr>
<td>Turn-taking</td>
<td>33.30</td>
</tr>
<tr>
<td>Declarative</td>
<td>25.67</td>
</tr>
<tr>
<td>Rehearsal</td>
<td>13.48</td>
</tr>
<tr>
<td>Self-regulatory</td>
<td>13.18</td>
</tr>
<tr>
<td>Yes-answer</td>
<td>5.15</td>
</tr>
<tr>
<td>Request</td>
<td>5.25</td>
</tr>
</tbody>
</table>
Speculation and Future Research

- Concomitant childhood stuttering and ASD
  - Onset at later chronological ages that coincide with spurt in language growth (see slide #24 for references).
  - May follow common patterns of persistence and recovery (Yairi & Ambrose, 2005).
  - May respond to indirect methods of treatment.

- Treatment implications and case illustration
Weighing the odds

More concern
- Family history of chronic stuttering
- Male
- Stable or increasing pattern of Stutter-Like Disfluencies (SLD’s) over 12 mos.
- Stuttering onset after 36 months
  - Relatively poorer speech/language performance
    - No family history or history of recovered stuttering

Less concern
- Female
- Decrease in SLD's over 12 months
- Early onset of symptoms
- Strong speech/language skills

Note: Severity of symptoms do not appear to be a risk factor
Patterns to monitor

- Recovery
- Chronic
- Immediate concern
For further help and study info...

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Questions?

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References and Resources


