Behavioral Inhibition and Childhood Stuttering

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INTRODUCTION

The relation of temperament to developmental stuttering has recently received considerable attention (Anderson, Pellowski, Conture, & Kelly, 2003; Eggers, De Nil, & Van den Bergh, 2010). Conture et al.’s (2006) Communication-Emotion model (C-E) suggests that temperamental factors (e.g., emotional reactivity or emotion regulation) may contribute to quantitative and/or qualitative change in stuttering of children who stutter. To date, most studies of temperamental characteristics associated with childhood stuttering have relied solely on parental report (e.g., Anderson, et al., 2003; Eggers et al., 2010; Karrass et al., 2006). Kagan and his colleagues (Kagan, Reznick, Clarke, Snidman, & Garcia-Coll, 1984; Kagan, Reznick, & Giibons, 1989; Kagan, Sidman, & Arcus, 1998) have, however, reported that one temperamental characteristic, behavioral inhibition (BI), can be measured reliably by means of behavioral observation. BI is one of temperamental characteristics that is expressed as initial avoidance, distress, or subdued emotion when a person is exposed to the unfamiliar people, places, and situations (Garcia Coll, Kagan, & Reznick, 1984; Kagan et al., 1984).

It was the purpose of this study, therefore, to assess the relation of BI to stuttering, communication attitude and speech/language output in preschool-age children who do (CWS) and do not stutter (CWNS). It was predicted that preschool-age CWS, when compared to preschool-age CWNS, would exhibit more behavioral inhibition. Similarly, it was predicted that more behaviorally inhibited CWS, when compared to less behaviorally inhibited CWS, would exhibit (a) greater stuttering and (b) longer stuttering duration during the conversation.

METHOD

Participants

26 preschool-age CWS (22 males) and 28 preschool-age CWNS (13 males) participated. CWS produced 3 or more SLDs per 100 words and scored 11 or higher on SSI-3. CWNS produced 2 or fewer SLDs per 100 words and scored 10 or lower on SSI-3.

Procedure

A child was observed in a free-play situation with an unfamiliar adult examiner. All conversational speaking behaviors were video-recorded for subsequent analysis. Systematic Analysis of Language Transcripts, research version 2008 (SALT 2008; Miller & Iglehus, 2008) were used to transcribe a child’s utterances and to measure (1) MLU, (2) 7 types of (non)stuttered disfluency (i.e., sound/syllable repetition, monosyllable word repetitions, sound prolongations, revisions, interjections, and phrase repetitions) and (3) the presence/absence of three types of spontaneous comments (i.e., unprovoked utterance, question, elaboration of answer). Each participant’s first 10 minutes of the conversation and latency to the 6th spontaneous comment was measured using the time display of the Microsoft Window Media player 10. Duration of instances of stuttering (based on 10 non-systematically selected stutterings per participant) was measured to the nearest one-tenth of a second with a stopwatch from the audio video recordings. Similarly, each participant’s communication attitude was measured using the KiddyCAT.

RESULTs

Types of spontaneous comments

<table>
<thead>
<tr>
<th>Example</th>
<th>Types of spontaneous comments (SC)</th>
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</thead>
<tbody>
<tr>
<td>Unprovoked comment (U)</td>
<td>Child: Oh look, this is a pig [U]. Examiners: How many sisters do you have?</td>
</tr>
<tr>
<td>Elaboration of answer (E)</td>
<td>Child: Kathy is 8 years old and Anaia is 9 years old [E].</td>
</tr>
<tr>
<td>Question (Q)</td>
<td>Child: They all go to school [Q].</td>
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</tbody>
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Note: [S] refers to a ‘simple answer’ (i.e., Non-spontaneous comment).

Figure 1. Between-group differences in latency to the 6th spontaneous comment

Figure 2. Relation of talker group (CWS versus CWNS) and BI

Main Finding #1:

CWS were marginally more apt to exhibit BI than CWNS

Main Finding #2:

There were more CWS with high BI and less CWS with low BI than CWNS.

Main Finding #3:

More behaviorally inhibited CWS, when compared to less behaviorally inhibited CWS, exhibited greater stuttering.

Main Finding #4:

For CWS, BI was significantly negatively related to number of words during the first 10 minutes of conversation.

CONCLUSION

The present study explored differences in behavioral inhibition between preschool-age CWS and CWNS during an interaction with an unfamiliar examiner. Unlike previous studies based on parent reports, behavioral observation was employed to measure a child’s temperamental characteristic, specifically behavioral inhibition. Findings are taken to suggest that one type of temperamental characteristics (i.e., behavioral inhibition) may be associated with exacerbation of childhood stuttering, and that CWS are more likely to exhibit extremely high behavioral inhibition and less likely to exhibit extremely low behavioral inhibition than CWNS.

REFERENCES


