Developmental (childhood) Stuttering:

II. Understanding its association to emotion
“To better understand the young stutterer’s environment as well as his or her psycho-social-emotional behavioral tendencies, we must progress beyond the notion that young stutterers’ psyche and/or environment can only contribute to stuttering if these children are neurotic or psychotic, possess character disorders or have a home life wildly disparate from that of their normally fluent peers.”

Five possible perspectives regarding experiences, environmental and temperamental influences on children’s social-communicative development:

(A) Environmental perspective,
(B) General temperamental perspective,
(C) Experiences moderate temperament influence,
(D) Experiences mediate temperament influence and
(E) Goodness of fit between child’s experiences and child’s temperament.

Stressors: Our environment can sometimes be fairly stressful

Stressors can take various forms, for example, *daily life hassles* (e.g., heavy traffic makes you late for work), *acute* (e.g., car accident with injuries) or *chronic* (e.g., frequent migraine headaches) events

“Heroes, THE SHARK!”

www.myspace.com
Emotional Responses:

- **Experiential**, e.g., “I feel nervous”
- **Behavioral**, e.g., rubbing one’s hands together
- **Physiological**, e.g., heart rate increases

ABCs of Stuttering (Cooper and Cooper, 1984)

Affective (too monolithic)

Examples: shame, embarrassment, guilt, fear, frustration

- Behavioral (emotion & spch-lang)

Examples: primary (blocks, repetitions); secondary (facial concomitants, bodily movements, avoidance)

- Cognitive (needs to include explicitly mention memory, attention, motivation)

Examples: inferior, stupid, different, less potential

The KiddyCAT is a twelve-item, yes/no response questionnaire, designed to obtain 3 to 6 year old children’s self-reported attitudes regarding their speech abilities (Vanryckeghem & Brutten, 2007).

A higher score (out of 12) on the KiddyCAT suggests greater negative attitudes towards one’s speech.

Preschool-age CWS scored significantly higher than CWNS on the KiddyCAT, regardless of age or gender.


<table>
<thead>
<tr>
<th>Talker Group</th>
<th>Present Findings</th>
<th>Vanryckegehem &amp; Brutten (2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Group(^a)</td>
<td>CWS</td>
<td>CWNS</td>
</tr>
<tr>
<td>Younger</td>
<td>Older</td>
<td>Younger</td>
</tr>
<tr>
<td>N</td>
<td>42</td>
<td>10</td>
</tr>
<tr>
<td>(M (SD))</td>
<td>KiddyCAT Score by Age Group(^b)</td>
<td></td>
</tr>
<tr>
<td>Younger</td>
<td>Older</td>
<td>Younger</td>
</tr>
<tr>
<td>4.60 (2.50)</td>
<td>3.70 (2.58)</td>
<td>3.30 (2.11)</td>
</tr>
</tbody>
</table>

\(^a\)Age group categories based on chronological age.

\(^b\)KiddyCAT scores are standardized with a mean of 10 and a standard deviation of 3.0.
Additionally, Clark et al. (2012) found that:

1. A single factor was extracted from the CATPCA, indicating that one dimension—speech difficulty—underlies the KiddyCAT items; and

2. Many more of the KiddyCAT test items loaded for CWS than CWNS, suggesting that CWS’ responses may be associated with their relatively frequent experiences with speaking difficulties (i.e., stuttering).
Read each sentence carefully so you can say if it is true or false for you. The sentences are about your talking. If you feel that the sentence is right, circle "True." If you think the sentence about your talking is not right, circle "False." Remember, circle "False" if you think the sentence is wrong and "True" if you think it is right.

1. I don't talk right
   True False
2. I don't mind asking the teacher a question in class.
   True False
3. Sometimes words will stick in my mouth when I talk.
   True False
4. People worry about the way I talk.
   True False
5. It is harder for me to give a report in class than it is for most of the other kids.
   True False
6. My classmates don't think I talk funny.
   True False
7. I like the way I talk.
   True False
8. People sometimes finish my words for me.
   True False
9. My parents like the way I talk.
   True False
10. I find it easy to talk to most everyone.
    True False
11. I talk well most of the time.
    True False
12. It is hard for me to talk to people.
    True False
13. I don't talk like other kids.
    True False
14. I don't worry about the way I talk.
    True False
15. I don't find it easy to talk.
    True False
16. My words come out easily.
    True False
17. It is hard for me to talk to strangers.
    True False
18. The other kids wish they could talk like me.
    True False
19. Some kids make fun of the way I talk.
    True False
20. Talking is easy for me.
    True False
21. Telling someone my name is hard for me.
    True False
22. Words are hard for me to say.
    True False
23. I talk well with most everyone.
    True False
24. Sometimes I have trouble talking.
    True False
25. I would rather talk than write.
    True False
26. I like to talk.
    True False
27. I wish I could talk like other kids.
    True False
28. I am afraid the words won't come out when I talk.
    True False
29. I don't worry about talking on the phone.
    True False
30. People don't seem to like the way I talk.
    True False
31. I let others talk for me.
    True False
32. Reading out loud in class is easy for me.
    True False
## Children’s Attitudes About Talking—Revised (CAT-R)

1. I don’t talk right. & True & False  
2. I don’t mind asking the teacher a question in class & True & False  
3. Sometimes words will stick in my mouth when I talk. & True & False  
4. People worry about the way I talk. & True & False  
5. It is harder for me to give a report in class than it is for most of the other kids. & True & False  
6. My classmates don’t think I talk funny. & True & False  
7. I like the way I talk. & True & False  
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### Children’s Attitudes About Talking--Revised (CAT-R)

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By Gene J. Brutton, Ph.D. Copyright, 1985

Anxiety is not a monolith: Two basic types (Engles et al. (2007). Specificity of regional brain activity in anxiety types during emotion processing. *Psychophysiology*, 44, 352-363.)

Anxious apprehension

“I don’t sit around worrying when something goes wrong. I just quickly panic.” Joseph Farris, Ref jfa0171, www.cartoonstock.com

Anxious arousal

“Peanuts” by Charles Schultz

Both anxiety types can co-exist within a person; however, it is also possible for one to dominate
Some possible relations between Emotional Reactivity (arousal) and Emotional Regulation (coping). Note: Below statements of “adequacy” are ones of probability rather than absolute certainty.

<table>
<thead>
<tr>
<th></th>
<th>High Regulation</th>
<th>Low Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Reactivity</strong></td>
<td>Adequate Outcome</td>
<td><strong>Less-than-Adequate Outcome</strong></td>
</tr>
<tr>
<td><strong>Low Reactivity</strong></td>
<td><strong>Less-than-Adequate Outcome</strong></td>
<td>Adequate Outcome</td>
</tr>
</tbody>
</table>

Converging lines of evidence:

Emotional and Linguistic Contributions to Childhood Stuttering
**Temperamental Emotion:** On measures derived from BSQ (McDevitt & Carey, 1978), scores for CWS (n=65), when compared to CWNS (n=56), showed higher emotional reactivity, lower emotion regulation, and lower attention regulation.

Situational emotional Responding (observational data; Arnold et al., 2011): For preschool-age CWS (n = 8), increased stuttering was significantly related to decreased regulatory strategy duration ($r = -.862, p = .003$) and regulatory strategy frequency ($r = -.676, p = .045$).

Situational emotional responding (observational data): CWS (n=19) and CWNS (n=22) participated in narrative tasks after positive, negative, or neutral overheard conversations.

For preschool-age CWS, the longer the *latency to their 6th spontaneous comment* (higher behavioral inhibition), the greater their stuttering frequency.

Case Study #3: Bobby (not his true name)

- Bobby does poorly on important English test (hint: does not tell his mother); mother finds out, scolds him strongly
- Bobby, who up to now, is making slow and steady progress with stuttering, exhibits 200% increase in stuttering at next therapy session
- What is happening? Not all the information is provided, you may ask questions

Remember: Stuttering varies, for various reasons, not all of which we understand
Temperament: CWS: Slow to adapt, minimally distractible; parents often describe as sensitive to change, having strong fears, having difficulty separating from parents.

CWS boys = 170 & girls = 62; CWNS boys = 124 & girls = 111

Temperamental Characteristics Scale (TCS): Mean and standard deviations for children who do and do not stutter.

TCS Score; 7 = minimum (high behavioral inhibition); 35 = maximum (low behavioral inhibition)
Concurrent Validity

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td>Significant negative correlation between latency to the 6th spontaneous comment and total TCS score (Spearman’s rho = -0.319, p = 0.019) (for outcome variable see Choi, Conture, &amp; Walden, 2012)</td>
</tr>
</tbody>
</table>

Convergent Validity

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>376</td>
<td>Significant negative correlations between total scale score and three BSQ dimensions (approach/withdrawal: Spearman’s rho = -0.69, p &lt; 0.001; adaptability: Spearman’s rho = -0.351, p &lt; 0.001; mood: Spearman’s rho = -0.253, p &lt; 0.001) that have been shown to be related to behavioral inhibition (Izard, Schultz, Fine, Youngstrom, Ackerman, 1999-2000)</td>
</tr>
</tbody>
</table>

Internal Consistency

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>467</td>
<td>Cronbach’s alpha = 0.76</td>
</tr>
</tbody>
</table>

Test-retest Reliability

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>73</td>
<td>8-month stability coefficient (Spearman rho) = 0.78.</td>
</tr>
</tbody>
</table>
**Temperament:**

CWS: Slow to adapt, minimally distractible; parents often describe as sensitive to change, having strong fears, having difficulty separating from parents.

---

**Temperament Characteristics Scale**

Mary Elizabeth Oyler, Ph.D. Copyright © 1996 by Mary Elizabeth Oyler. All rights reserved.

<table>
<thead>
<tr>
<th>Name: __________________________</th>
<th>Name of Parent: __________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Birth: ___________</td>
<td>Age: ___________</td>
</tr>
<tr>
<td>Date: ________________</td>
<td>Grade: ___________</td>
</tr>
</tbody>
</table>

Below is a list of personal traits or characteristics that describe children. Please circle the number that best describes your child from birth to 4 years of age compared to other children the same age. For each item, please circle one number from the 1 to 5 range.

**Score 3 = average**

1. Retracts immediately from unfamiliar people or objects
   - 1 usually retreats
   - 2 retreats somewhat
   - 3 average
   - 4 approaches somewhat
   - 5 approaches easily

2. Stays close to the parent
   - 1 difficult to separate
   - 2 hesitant to separate
   - 3 average
   - 4 separates easily
   - 5 separates very easily

3. Takes a period of time to warm up to or to interact unfamiliar people
   - 1 long time to warm up
   - 2 somewhat hesitant to warm up
   - 3 average
   - 4 approaches fairly easily
   - 5 approaches and warms up very easily

4. Stops play and vocalizing when unfamiliar person approaches
   - 1 stops
   - 2 quieter and hesitant
   - 3 average
   - 4 plays and notices
   - 5 plays and unaffected by one's approach

5. Stays alone and away from other children or care giver/teacher when in group
   - 1 isolates
   - 2 quieter and hesitant
   - 3 average
   - 4 mixes fairly easily
   - 5 mixes very easily

6. Heightened fears (for example-loud noises, being alone, bugs, separation, taking a bath, nursery school, etc.)
   - 1 fearful
   - 2 somewhat fearful
   - 3 average
   - 4 shows little fear
   - 5 no unusual fear

7. Highly reactive (very responsive to the environment or changes in the environment)
   - 1
   - 2
   - 3
   - 4
   - 5 Lack of reaction, almost passive
Contact Info: Originator of (still-in-development) **Temperamental Characteristics Scale** (TCS) for children who do and do not stutter:

**Oyler, Mary (Libby), Ph.D.**

Resources For People Who Stutter

[stutterresource@comcast.net](mailto:stutterresource@comcast.net)

Excellent overview/review of temperament:

Developmental Stuttering and Emotion: What have we learned?

- **Diagnostically**, preschool-age CWS when compared to preschool-age CWNS exhibit
  - Greater emotional reactivity, lower emotional regulation and lower attentional regulation
- **Stuttering-wise**, preschool-age CWS exhibit *greater stuttering* in association with
  - Less emotion regulation
  - More emotional reactivity
  - Longer latency (even when duration of instances of stuttering are controlled for) to spontaneously initiate comments