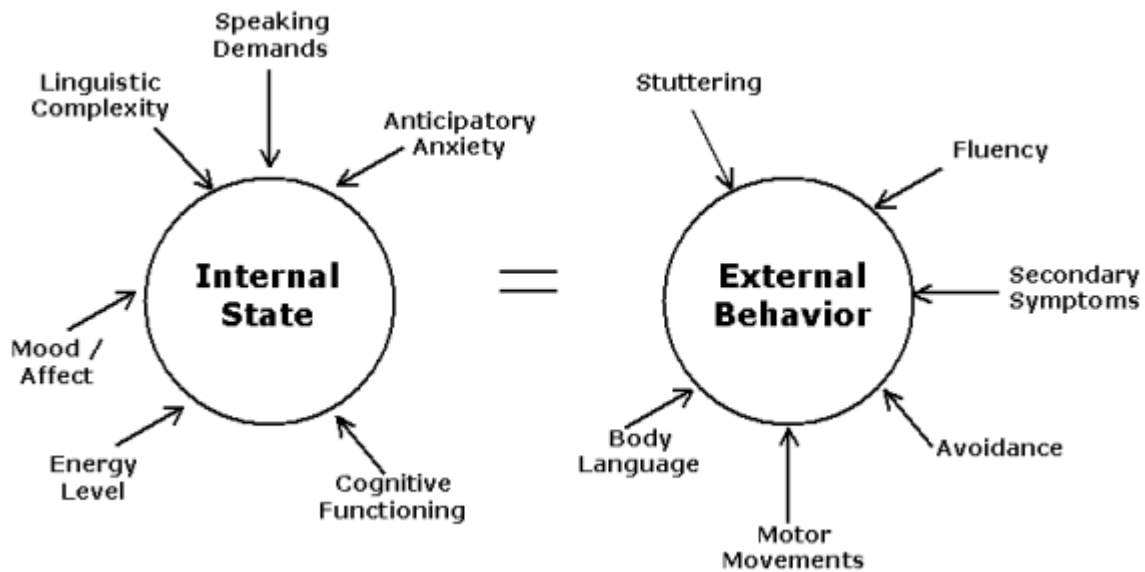# IS = EB
Stuttering Inside and Out

Internal State (I.S.)

This refers to the thoughts, feelings, and cognitive-linguistic workings that translate into outer, observable behaviors.

1. **Linguistic Complexity** refers to the language resources needed by the speaker to verbally express herself. Obviously, naming an object (saying one word) is easier than telling a story from memory. As more cognitive-linguistic resources are required, the risk for disfluency rises.

2. **Speaking Demands** include turn taking, time-pressure, being "in the spot light," interruptions, speaking over noise, public speaking, telephoning, introductions, story or joke telling, and other challenges to poise and fluency.

3. **Mood/Affect** will influence a person's state. Anger, depression, or frustration about things related or unrelated to speech can absolutely affect speech production and one's ability to cope with stuttering. An unresourceful state will make it more difficult to monitor behavioral and cognitive targets related to speech fluency. A resourceful state can enhance fluency and help in coping with periods of disfluency.

4. **Energy Level** runs on a spectrum from lethargic to hyperactive. Speech is a sophisticated motor skill that can be adversely affected by lethargy and/or illness. In some cases, lethargy slows a person's speaking rate or limits how much he speaks. On the other hand, lethargy can hinder coordination of speech-motor movements and increase disfluency. Hyperactivity can make it very difficult for a person to manage his state, remember strategies, control rate of speech, and many other significant fundamentals related to producing fluent speech.

5. **Cognitive Functioning** refers to the existence of any overlaying cognitive-linguistic
   deficits. Attention deficits, sensory integration disorders, autism spectrum disorders, mental impairments, a history of anxiety or depression, learning disabilities, and other disorders will make managing one's internal state more of a challenge.

6. **Anticipatory Anxiety** refers to the person who stutters (pws) expecting to stutter. They know in their unconscious mind that they are going to stutter. Many pws have specific words, situations, or speech sounds that they anticipate stuttering. Children younger than three years old have exhibited sophisticated avoidance behaviors and word substituting when anticipating a stutter. Similar to a computer "search engine," these young children can remember the specific words that result in frustration and then want to prevent struggling with them. Avoidance in response to anticipatory anxiety is common amongst adolescents, teens, and adults who stutter. Anticipatory anxiety will intensify the internal state and adversely affect fluent, easy speech production. How does a person feel about stuttering for him to choose to prevent it by avoiding? Anticipatory anxiety, consistent with the Fight or Flight response, is generally felt in the area between the stomach and the throat. This nervous and anxious feeling results in tightening and restriction of key speech production areas: the larynx, tongue, lips, and air stream.

Note that many prescription medications will impact the internal state, and in turn, affect external behaviors. ADHD meds, in particular, have been shown to impact fluency (Healey, 2003). Zoloft, Prozac and other medicines have been prescribed to reduce anxiety about stuttering. Risperidon, a Tourette's Syndrome and schizophrenia medicine, has also been used in clinical trials for stuttering. Consult a physician, consider potential side effects, and research proof of efficacy before considering any such medicines.

External Behaviors (E.B.)

1. **Stuttering**. As the internal state "boils like a teapot" there is a greater chance for repetitions, blocks, and all other disfluencies.

2. **Fluency.** An ideal internal state will manifest more speech fluency.

3. **Secondary Symptoms** refer to behaviors related to the severity of the stuttering. Common secondary symptoms include eye blinks, facial contortion, vocal pitch increases, running out of breath, and other ways of struggling to get words out.

4. **Avoidance** is guided by internal state and is manifested in the behaviors. The intention of avoidance is trying not to stutter. Evidence of avoidance seen in external behaviors may include word substitution, interjecting unnecessary words and phrases as "fillers," not raising one's hand in class, phone call avoidance tricks, and other significant external behaviors.

5. **Motor Movements** that are a "red flag" for internal state combustion include extraneous movements of limbs to force a word out, eye contact aversion, head nodding, and deep inhalations preceding a block. These motor movements are a

direct result of an internal state that is "cooking." Neurological "tics" and self-stimulating behaviors in children with sensory integration disorders can occur separate from stuttering behaviors, but can be significant in diagnosis and treatment. It is important to differentially diagnose between motor movements that are a direct product of stuttering and those like "tics." For example, some people with tics will frequently squint or blink their eyes even when not speaking. Stuttering can result in eye blinks (escape behaviors) or squinting, strained eyes due to strain. Eye contact aversion- looking away during the stutter- is indicative of avoidance and self-consciousness about stuttering (Mackesey, 2002).

6. **Body Language** such as posture, eye contact aversion, withdrawing, and so on are E.B. as a result of I.S.. A pws exhibiting slumped shoulders, eye contact aversion, and a depressed affect/mood is behaviorally expressing his internal state. A pws who can maintain eye contact and exhibit nonverbal confidence in his state has a more resourceful internal state.

Clinicians and parents want to make observations regarding triggers to I.S.. Environmental adaptations, parenting style, and communication changes can help with I.S.. When external behaviors are significant there is most definitely an I.S. correlation. Changing E.B. will improve I.S.. For example, a child who is quickly improving his fluency via speech therapy may have a better mood and handle linguistic complexity with more ease.

Joseph Sheehan, Ph.D., an early pioneer in stuttering therapy, once used the metaphor of an iceberg to describe stuttering. He said that only a small portion of an iceberg is visible to the eye, and that large part of the iceberg is under the surface of the water. A person's Internal State would represent the portion "under the surface" and the tip would be the external behaviors.

The iceberg metaphor is most accurate in a person appearing very mild on the surface (E.B.), but is avoiding and has significant anxiety about stuttering (I.S.). This scenario is most prevalent in adolescent to adults who stutter. One vice president of a major corporation passed as "fluent" to many people, but was faking sick to miss teleconferences. A young child who is mild on the surface (EB) does not necessarily have significant covert issues (IS). Many young children live by the principle that force achieves more than patience (i.e., pulling a sock that is stuck in a dresser drawer) and exhibit dramatic symptoms of struggle while forcing a word out. The youngster's I.S. may be most attributed to linguistic complexity and speaking demands during this period of rapid language acquisition and speech-motor development. A stuttering specialist can help plan a course of treatment.

When describing children age 2-7 I like to use the metaphor of a funnel. Visualize holding a funnel vertically to the side of your head with the large opening on top and the small opening along side your mouth. Now, you want to tell an exciting story and have a large volume of words, speech sounds, and concepts to dump from your brain into this narrow passage ALL AT ONCE. The funnel runs over and spills out words and sounds! The narrow opening is a child's still-developing speech-motor system.

The longer a person stutters and develops an awareness of it, and perhaps dislike of it, will effect how "locked in" the behaviors become. A preschooler can exhibit dramatic secondary symptoms, struggle, avoidance, and verbalize emotions related to his speech problem. Even though he has significant I.S. and E.B. features, a preschooler can often

recover quickly with specialized help. A preschooler is still in Piaget's Preoperational Stage so he does not remember as well and does not personalize stuttering like the older child will.

By only treating external behaviors and neglecting internal state features, a clinician helping an adolescent to adult will likely see a plateau in treatment and eventual relapse. If the pws has any anxiety, anticipation, avoidance, or other significant I.S. issues, the clinician is advised to help facilitate change in this area. One teenager who stutters stated: "It's like I have a tug-o-war inside me. I want to go up to a girl and speak. I try to remember the speech techniques, but then I get scared I'll stutter and then wham! I do it (stutter)." In this situation, I.S. was stronger than the ability to control E.B. (speech). Neglecting to reframe (change) this boy's thoughts and feelings about stuttering (IS) and just teaching behavioral speech targets (i.e., stretching words) would be ignorant.

Cognitive Reorganization

Conversational reframing is used to elicit the affect and cognitions a person has about her stuttering. These cognitive distortions (Burns, 1989) driving I.S. can be responsible for the affect, avoidance, eye contact aversion, and word substitution noted in many people who stutter. These distortions usually take the form of beliefs (i.e., "Others think I am stupid when I stutter") or personalization/identification (i.e., "I am incompetent to practice law if I stutter"). Here is an actual script from therapy with a boy entering 6th grade:

Child: "I'm nervous about starting 6th grade."
T: "Hmm. What is it about starting 6th grade?"
Child: "My stuttering."
T: "What is it about stuttering that has had you thinking that way?"
Child: "The kids will think I am weird if I stutter."
T: "Which kids? How do you know?"
Child: (smiles as he detects assumptions) "Well…I just guess that."
T: "Let me write that on my dry erase board like a math equation. Here it is
Stuttering = Weird. Who taught you to think stuttering is weird?"
Child: (smiles again) "I guess I did."
T: "That is some weird math."
Child: (laughs out loud)
T: "If you met another kid who stutters, would you recommend that he call himself weird because he stutters?"
Child: "No way"
T: "If you are sick of thinking 'stuttering = weird,' walk over, erase the word 'weird,' and change the equation to something better."
Child: (walks over and writes "just as smart")
T: "Yes. Awesome. When you realize that you are just as smart as the other kids even though you sometimes stutter, how do you feel about 6th grade?"
Child: "Better"
T: (shows child poster of famous people who stutter from the Stuttering Foundation of America). "This congressman who stutters, Tom Wolf, is he smart?" Several other metaphors were used to further reframe the distortion of "stuttering means I am weird."

Another way to look at this is through IS=EB. The boy entering 6th grade was nervous because he was running a mental movie (Hall, 2002) about stuttering and mind reading that the kids will think he is weird. Mind reading is presuming to know what others think

and is caused by projecting our own feelings unto others. So, in his mind he had an equation: weird/nervous (I.S.) = stuttering (E.B.). It is easy to understand that if he entered 6th grade with such a cognitive distortion, that his anxious internal state would result in increased stuttering. Conversely, reframing this mental equation can reduce anxiety (I.S.) and increase speech fluency (E.B.).

Using conversational reframing is invaluable in eliciting the cognitions responsible for any situational anxiety reported by people who stutter. Common situations that increase stuttering include oral presentations, ordering food, telephone use, introductions, and oral reading. The best single reference for conversational reframing is a book called Mind-Lines (see below).

Summary

Some pws manifest stuttering in very specific situations, on specific words and sounds, or with certain listeners. What is happening cognitively in these moments? The pws slips into an I.S. ripe for stuttering. One adult reported consistently stuttering on "Diet Coke" - his favorite drink. As he sat down at a restaurant anxiety would build as he anticipated blocking. He vividly recalled dozens of past stuttering moments and his search engine quickly remembered to fear stuttering. He would mindread and worry about the reaction from his waitress. Any other beverage was easy to order. Using traditional speech techniques such as "light articulatory contacts"- when you stretch the first sound of a word- is often impossible due to the intense I.S.. Reframing the anxiety and overall desensitization, accomplished through cognitive reorganization, provided the I.S. conducive to fluency- the E.B.

A person's internal state (I.S.) will determine external behaviors (E.B.). Likewise, external behaviors can correlate to internal state. A person with a relatively severe stutter (E.B.) and who has been subject to negative feedback from listeners will likely have related internal state issues (i.e., anxiousness about speaking, avoiding). It is never "cut and dry" nor simple to figure out quickly. It is imperative for the clinician or parent helping a person who stutters to evaluate these "sub systems" of stuttering when planning treatment. By "chunking down" stuttering into these sub systems we can generate short term and long term goals. Further, it is critical to watch as I.S. and E.B. features change and modify the plan of treatment accordingly.

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