Speech-Language Pathology/Stuttering

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1 Core Stuttering Behaviors

1.1 How Fluent Speech Is Produced

Speech begins with breathing, also called *respiration*. Your lungs fill with air, more air than you would inhale if you weren't talking. You expand your upper chest and your diaphragm (belly) to get all this air in. Your lung pressure and respiration muscle tension increase.

Next, you release air through your throat, past your vocal folds (also called *vocal cords*). Your vocal folds are a pair of small muscles in your larynx. If you tense these muscles slightly, and release a little air, your vocal folds vibrate. This is called *phonation*. It's also called the *fundamental frequency* of your voice. If you place your fingers across the front of your throat, then hum or talk, you can feel your vocal folds vibrating.

Adult men vibrate their vocal folds about 125 Hz (125 times per second). Women vibrate their vocal folds about 200 Hz. Children's voices are even higher. This is too fast for your brain to control. Vocal fold vibration is the only muscle activity that your brain doesn't directly control. Instead, phonation results from the coordination of respiration muscles with slight tensing of your vocal fold muscles.

The key word in that last sentence was *coordination*. Stuttering is largely a disorder of poorly coordinated speech production muscles.

If you tense your vocal folds too much, you block off your throat and stop air from escaping your lungs. This is good when lifting heavy weights. By blocking your larynx muscles, you increase lung pressure, which strengthens your chest and you can lift more weight. Similarly, tires inflated to high pressure can carry a heavier car. But that's what stutterers do when they talk, and it's not a good idea.

The space in your throat above your larynx is called the *pharynx*. Above your pharanx are your oral and nasal cavities. These spaces create vocal resonation. This is like the echoing of a cathedral or tunnel. The unique shape of these spaces makes each of our voices sound unique.

Your jaws and lips, collectively called the *articulation muscles*, modify your voice into intelligible speech.

Vowels and *voiced* consonants (such as /b/ and /d/) are produced by your vocal folds, and modified by your articulation muscles (jaw, lips, tongue).

Other consonants are *voiceless*, such as /p/ and /t/, produced by your articulation muscles modifying airflow, without your vocal folds vibrating. When you whisper, you don't vibrate your vocal folds. You just modify airflow with your articulation muscles.

Speech requires coordination of over 100 muscles. The average person speaks about 150 words per minute. Each word requires a different configuration of most of those muscles. Speech is our most complex, balanced neuromuscular activity.

1.2 Core Stuttering Behaviors

Core stuttering behaviors include:

- Disordered breathing, including antagonism between abdominal (belly) and thoracic (upper chest) respiratory muscles; complete cessation of breathing, and interrupting exhalation with inhalation.
- Disordered vocal folds, including high levels of muscle activity or muscle tension; poor laryngeal too late or holding tension too long; and poor coordination of laryngeal muscles, e.g., incompatible contractions of opposing muscles.
- Disordered articulation, including dysfunctions of the lips, jaw, and tongue in stuttering. In general, stutterers place their articulators in the right positions (in contrast to other speech disorders such as lisping, in which individuals form incorrect sounds), but time the movements wrong.
- Low-frequency tremors in the neck, jaw, and lip muscles of adult stutterers. These are found to a lesser extent in older children, and not found in young children who stutter.

1.3 Secondary Behaviors

Secondary stuttering behaviors are unrelated to speech production:

- Physical movements such as eye-blinking, forehead wrinkling, sudden exhaustion of breath, frowning, or nostril quivering.
- Gross (large) muscle movements such as head jerks or slapping one's thigh in an attempt to release a vocal fold block or other overtense speech-production muscle.
- Avoidance of feared words, such as substitution of another word.
- Postponement of a feared word, with pauses or filler words.
- Interjected "starter" sounds and words, such as "um," "ah," "you know," or "in other words."
- Repeating a sentence or phrase "to get a running start."
- Vocal abnormalities to prevent stuttering, such as speaking in a rapid monotone, affecting an accent, or using odd inflections.
- Looking away from the listener, not maintaining eye contact.
- Articulating an unrelated sound, e.g., forming a /t/ sound when trying to say /s/.

Secondary behaviors may help you get around stuttering at first, but then lose their effectiveness. The secondary behavior is then retained out of habit.

1.4 Definitions of Stuttering

Fluent speech can be defined in four parameters:[Starkweather1987]

- Smoothness, or lack of interruptions.
- Speaking rate.
- Prosody, or emotional intonation.
- Mental effort.

Stuttering can be defined as:[Wingate1964]

- I. (a) disruption in the fluency of verbal expression, which is (b) characterized by involuntary, audible, or silent repetitions or prolongations in the utterance of short speech elements, namely: sounds, syllables, and words of one syllable. These disruptions (c) usually occur frequently or are marked in character and (d) are not readily controllable.
- II. Sometimes the disruptions are (e) accompanied by accessory activities involving the speech apparatus, related or unrelated body structures, or stereotyped speech utterances. These activities give the appearance of being speech-related struggle.
- III. Also, there not infrequently are (f) indications or reports of the presence of an emotional state, ranging from a general condition of "excitement" or "tension" to more specific emotions of a negative nature such as fear, embarrassment, irritation, or the like. (g) The immediate source of stuttering is some incoordination expressed in the peripheral speech mechanism; the ultimate cause is presently unknown and may be complex or compound.

An essential difference between speech and language disorders is that persons with speech disorders (e.g., stuttering) know what they want to say, but can't say it.

Stammering is the British word for stuttering.

1.4.1 References

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2. [Starkweather1987]Starkweather, C.W. Fluency and Stuttering. Englewood Cliffs: Prentice-Hall (1987).

Category:Speech-Language Pathology[1]

1 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

2 Incidence and Prevalence of Stuttering

About 2.5% of preschool children stutter.[Proctor2002] This prevalence of preschool stuttering is less important than the incidence figure, which is about 5%. I.e., about 5% of children stutter at some point, and about 2.5% of children stutter now.

Less than 1% of adults stutter. 0.73%, or about one in 135 adults, was the figure found in a recent study.[Craig2002] That suggests that about two million Americans stutter. But this seems high. The number of adults who've sought treatment is somewhere around 25,000.[Ref1] How many stutterers have you met, outside of speech clinics and support groups? You likely hear 135 people talking every week. Do you hear someone stutter every week?

Extensive publicity for several anti-stuttering devices was seen by over 100 million people, yet only about 2500 devices of each device were sold. The membership figures for the National Stuttering Association are similar.

This suggests that stuttering is either relatively common, but unimportant to 90% to 99% of the people who stutter; or that stuttering is a rarer disorder than the non-profit organizations say in their fundraising letters.

2.0.2 References

1. [Proctor2002]Proctor A., Duff, M.. and Yairi, E. (2002). "Early childhood stuttering: African Americans and European Americans." *ASHA Leader*, 4:15, p.102.
2. [Craig2002]Craig. A, Hancock K, Tran. Y, Craig. M, & Peters, K. (2002). "Epidemiology of stuttering in the communication across the entire life span." *Journal of Speech Language Hearing Research*, 45:1097-1105.
3. [Ref1] The National Center for Stuttering and the Hollins Communications Research Institute have each treated around 5,000 stutterers. Most of the other three hundred Fluency Specialists have treated a few dozen stutterers.

Category:Speech-Language Pathology[1]

1 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

3 Development of Childhood Stuttering

Stuttering isn't a physical disorder. It's not a psychological disorder. Stuttering is a *developmental disorder*.

Children grow up in a certain order. They crawl before they walk. They walk before they run. They run before they ride bicycles. They ride bicycles before they borrow your car keys.

Usually. Some children walk before they crawl. My three-year-old nephew borrows my car all the time. Just joking. I don't own a car.

At each stage of physical development, a child's brain develops too. E.g., crawling helps the child develop communication between the left and right hemispheres of his brain. If all goes well, the child's physical, neurological, and psychological systems develop together.

A small, sometimes imperceptible, developmental misstep in early childhood can nudge a child off the normal developmental track. The child then grows on an abnormal developmental track. A minor problem can develop into a major disability as the child grows up.

3.0.3 Language-Learning Impairment

Some children can't hear the difference between short duration speech sounds. The difference between /b/ and /d/ sounds occurs within a few milliseconds (thousands of a second). Some children's brains' auditory processing isn't fast enough to hear fast speech sounds. To these kids, "bad" and "dad" are the same word, "bug" and "dug" are the same, and so are "buck" and "duck." (This is a form of *central auditory processing disorder*, or CAPD).

You'd think this would be a minor problem. After all, you know the difference between "sew" and "so." But it's not a minor problem. These children develop speech slower than other children. Slow speech development causes them to miss other developmental stages. Their grammar develops poorly. Listeners have difficulty understanding these children's speech. These children understand the difference between boys and girls, but interchange "he" and "she." They mix up past, present, and future tense.

Then these children are labeled mentally retarded, even though they're normal or even excel at non-language activities (e.g., building with Legos). They're put into special ed classes, with children who really are mentally retarded.

The children miss more developmental stages. As adults, these individuals may be unable to read, or have poor social skills, or be unable to work at more than menial jobs.

This disorder is called *language-learning impairment* (LLI). In the last ten years a treatment has been developed. These children can distinguish /b/ from /d/ if the words are slowed

down. Children with LLI now play a computer game that trains them to hear the difference between short-duration speech sounds.[Merzenich1996]

When their auditory dysfunction is corrected, the children develop normally. The children usually catch up with their peers, e.g., advancing four reading grade levels in six months.

Analogously, children's brains are like a railroad going from New York to Los Angeles. A little dysfunction can bump a child onto a sidetrack. The sidetrack may start out only a few feet from the main track, but twenty years later he's lost somewhere in South America.

Treatment is like giving the child a shove back onto the main railroad track. The child then zooms ahead to catch up with his peers.

(Brain scans show that adult stutterers have a different form of CAPD[1], which may affect how we hear our own voices or feel our speech-production muscles moving. No researchers have investigated whether children who stutter also have this form of CAPD, or if treating this form of CAPD stops stuttering from developing.)

- Wikipedia doesn't have an article about language learning impairment (LLI) but it has an article about specific language impairment[2] (SLI).

3.0.4 Early Intervention Is Best

Stuttering is similar to LLI, in that something small nudges a child off the normal developmental track at the age of two or three. This small nudge causes the child to grow on an abnormal developmental path. By adulthood, the stutterer has developed a variety of core symptoms, secondary behaviors, and psychological problems.

The average age of stuttering onset is 30 months.[Yairi1992] I.e., two-and-half-years-old is the typical age that children begin to stutter. Stuttering rarely begins after age six.

65% of preschoolers who stutter spontaneously recover, in their first two years of stuttering.[Yairi1993] These children grow up to have normal speech.[Finn1997] Some pediatricians tell parents to "wait and see" if a child outgrows stuttering on his own. But this advice is wrong. Children who stutter should be treated by a speech-language pathologist as soon as possible. (Schools provide free speech therapy to children as young as three years old.)

However, children who stutter longer are less likely to recover without treatment. Only 18% of children who stutter five years recover spontaneously.[Andrews1983]

The peak age of recovery is 3.5 years old. By age six, a child is unlikely to recover without speech therapy.

If your child is in grade school and has stuttered for five years, he or she will need a bigger shove to get back onto the normal development track.

1 Chapter 4.2 on page 14

2 http://en.wikipedia.org/wiki/Specific%20language%20impairment

3.0.5 Critical Ages in Stuttering Development

At two or three years old, children are quickly developing communication skills. Their brains are growing rapidly. A child's language skills may develop faster than his speech skills. He wants to communicate but can't easily and freely generate speech.

The child interjects "uh" and "um." He repeats words. He has silent pauses. He revises what he's saying in the middle of sentences, or leaves sentences incomplete. He's most dysfluent with long sentences, when interrupting or being interrupted, or during stressful periods, such as a divorce, the birth of a sibling, or moving to a new home.

Those are *normal dysfluencies*. All children have normal dysfluencies. Normal dysfluencies aren't stuttering.

The "experts" say that some children move from normal dysfluencies into stuttering. These children's frustration trying to talk leads them to push out words. The children tense their breathing, their vocal folds, and their lips, jaws, and tongues. The children struggle to talk, getting into longer repetitions, prolongations, and silent blocks.

Recognizing which behaviors are normal dysfluencies and which behaviors are stuttering is a key issue. The Stuttering Foundation of America[3] has a videotape to help parents differentiate normal dysfluencies from stuttering.

Because children's brains are growing at this time, their stuttering behavior becomes hardwired. Their brains shift onto an abnormal development path. The "experts" have identified five stages children go through as stuttering develops, over months and years.

Or are the "experts" wrong? Some parents report that their children woke up one morning stuttering severely. These children went from normal dysfluencies to severe stuttering overnight. The children skipped the development stages in between.

In a later chapter[4], you'll learn that a disorder similar to stuttering is triggered by a streptococcal infection causing a child's immune system to attack his or her brain's putamen motor control area. It's possible that a similar autoimmune dysfunction could attack a child's left caudate nucleus speech motor control area, causing severe stuttering to develop overnight.

You'll also learn that three genes[5] are linked to stuttering. These genes affect the neurotransmitter dopamine, which functions abnormally in adult stutterers. I.e., some children are genetically predisposed to a class of disorders that includes stuttering.

You'll also learn that adult stutterers have abnormal auditory processing[6]. (This abnormality is different from the auditory processing abnormality that causes language-learning impairment.)

These questions are important because they affect what therapy should be effective for children. If the "experts" are right that stuttering develops in five stages, beginning with

3 `http://www.stutteringhelp.org/`
4 Chapter 4.4.1 on page 16
5 Chapter 5 on page 21
6 Chapter 4.2 on page 14

normal dysfluencies, then early intervention is paramount, but the therapy can be a gentle nudge (e.g., telling the parents not to interrupt when the child is speaking).

But if the "experts" are wrong, and some children develop severe stuttering without going through intermediate stages, then therapy should start with a big shove back onto the normal developmental track. This important issue–*direct* vs. *indirect therapy*–is addressed in the chapter Stuttering Therapies for Pre-School Children[7].

3.0.6 References

1. [Merzenich1996]Merzenich, M., Jenkins, W., Johnston, P., Schreiner, C., Miller, S., and Tallal, P. “Temporal Processing Deficits of Language-Learning Im-paired Children Ameliorated by Training,” Science vol. 271, January 5 1996, p.77-80.
2. [Yairi1992]Yairi, E., Ambrose, N. "Onset of stuttering in preschool children: Selected factors," *Journal of Speech and Hearing Research*, 35, 1992, 782-788.
3. [Yairi1993]Yairi, E. (1993) "Epidemiologic and other considerations in treatment efficacy research with preschool-age children who stutter," *Journal of Fluency Disorders*, *18*, 197-220. Yairi, E., Ambrose, N. "Onset of stuttering in preschool children: Selected factors," *Journal of Speech and Hearing Research*, *35*, 1992, 782-788.
4. [Finn1997]Finn, Patrick. "Children Recovered From Stuttering Without Formal Treatment: Perceptual Assessment of Speech Normalcy," *Journal of Speech, Language, and Hearing Research*, 40, 867-876, August 1997.
5. [Andrews1983]Andrews, et al., "Stuttering: a review of research findings and theories," *Journal of Speech and Hearing Disorders*, *48*, 226-246, 1983.

3.1 Recommended Books

- Early Childhood Stuttering, by Ehud Yairi and Nicoline Ambrose (2004, ISBN 0890799857)

3.2 External Links

Category:Speech-Language Pathology[8]

7 Chapter 14 on page 51

8 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

4 Neurology of Stuttering

Most brain scan studies have found no differences between stutterers' and non-stutterers' cerebral activity during silent rest and during fluent speech.[Ingham1996]. But during stuttering, cerebral activity changes dramatically. Changes include:

- Left-hemisphere areas active during normal speech become less active, and areas in the right hemisphere not normally active during speech become active.[Braun1997] [Ingham1997]
- *Underactivity* in the central auditory processing area.
- *Overactivity* in the speech motor control area.

No brain scans have been done of stuttering children. We don't know whether these neurological abnormalities *cause* stuttering or *are caused by* stuttering. It's possible that stuttering causes a child's brain to develop abnormally in these two areas. It's also possible that some children have one or both neurological abnormalities before they start stuttering, which cause them to stutter.

4.1 Right-Hemisphere Overactivity

This abnormal right-hemisphere activity has produced a variety of speculative hypotheses from researchers. According to one hypothesis, something is wrong with stutterers' left-brain speech areas, and so right-brain areas not developed for speech take over. This seems unlikely, given that most stutterers are capable of normal, fluent speech in certain conditions. In contrast, neurogenic speech disorders (resulting from head injuries, strokes, etc.) result in disordered speech under all conditions. Because stutterers sometimes speak fluently and sometimes stutter, it seems unlikely that stutterers have something wrong with their left-hemisphere speech areas.

Another hypothesis says that the right-hemisphere activity is the fears and anxieties that stutterers experience, generated by the limbic and paralimbic structures. But brain scans haven't shown these areas to be abnormally active during stuttering.

A third hypothesis suggests that stutterers' auditory processing underactivity reduces the left-brain communication of sensory information processed in the rear brain to frontal speech and language areas. The abnormal right-brain activity may be an alternative pathway for rear-brain sensory information to travel to the front of the brain.

4.2 Auditory Processing Underactivity

- Wikipedia article about Auditory processing disorder[1]

Our ears hear sounds. Our brains process those perceived sounds into useful information, such as words. Central auditory processing disorder (CAPD) is not a single disease but rather is the term for anything wrong with how our brains process auditory information. A wide variety of disorders seem to have a CAPD component, including ADHD and language disorders.[Kutscher2005] CAPD is not a hearing disorder, i.e., a person with CAPD usually has nothing wrong with his or her ears.

What's wrong with adult stutterers' auditory processing is unknown. Speculatively, stutterers have something wrong with how we hear our own voices. A study suggested that adult stutterers have an inability to integrate auditory and somatic processing,[Braun1997] i.e., comparing what we hear ourselves saying to how we feel our muscles moving.

A brain scan study examined the planum temporale (PT), an anatomical feature in the auditory temporal brain region. Typically people have a larger PT on the left side of their brains, and smaller PT the right side (leftward asymmetry). A brain scan study found that stutterers' right PT is larger than their left PT (rightward asymmetry).[Foundas2001] A second study found that stutterers with this abnormal rightward asymmetry had significantly improved fluency with DAF (Delayed Auditory Feedback[2]), but stutterers with the normal leftward asymmetry didn't improve with DAF.[Foundas2004] The study also found that stutterers with this abnormal rightward asymmetry stuttered more severely than stutterers with the normal leftward asymmetry.

Do you have other symptoms associated with CAPD? Such symptoms include:

- Preferring to watch movies with the subtitles on.
- Preferring to learn a foreign language (or challenging vocabulary words, or difficult last names) by learning to read and write the words first, and then learning to hear and speak the words, and then only when the words are spoken slowly.
- Difficulty understanding what people are saying when there's background noise, such as noise at a party or wind on an outdoor hike.
- Difficulty picking out one musical instrument from a band or orchestra.
- Sensitivity to certain noises (e.g., inability to "tune out" a television on in the background while "tuning in" a conversation with a person).
- Difficulty identifying the direction of sounds.
- Difficulty following multi-step directions, especially if given in one sentence.
- Difficulty paying attention when reading long lists of stuff. Just joking!

For general treatments of CAPD, see the Wikipedia article about Auditory processing disorder[3].

Speculatively, exercises that train a stutterer to listen to his voice might improve fluency, but this hypothesis has not been tested. Such exercises might include acting or telling jokes

1 http://en.wikipedia.org/wiki/Auditory%20processing%20disorder
2 http://en.wikibooks.org/wiki/Speech-Language_Pathology%2FStuttering%2FDelayed_Auditory_Feedback
3 http://en.wikipedia.org/wiki/Auditory%20processing%20disorder

with different voices for different characters, or doing actors' accent training. Learning to switch from an Irish brogue to sounding like a Mississippi Delta blues musician to a Korean shopkeeper might enhance your brain's ability to integrate auditory and somatic processing.

Speculatively, altered auditory feedback anti-stuttering devices may correct stutterers' auditory processing underactivity. This hypotheses has never been tested but is the most likely explanation how anti-stuttering devices work. This would also explain the "chorus effect" of speaking with another person. For more information, see the chapter Anti-Stuttering Devices[4].

4.3 Left Caudate Nucleus Speech Motor Area Overactivity

The other neurological abnormality associated with stuttering is overactivity in the left caudate nucleus speech motor control area. Because stuttering is primarily overtense, overstimulated respiration, vocal folds, and articulation (lips, jaw, and tongue) muscles, it should be no surprise that the brain area that controls these muscles is overactive. (Citations of peer-reviewed research supporting these statements would be appreciated.)

However, research also documents that the left caudate is associated with decreased glucose uptake in people who stutter in both stuttering and enhanced fluency speaking conditions (Wu, et al., 1995); as such, this data argues that people who stutter demonstrate left caudate **hypo**metabolism as a possible trait marker for stuttering. Further research documents increased FDOPA uptake in the left caudate tail (Wu et al., 1997).

Fluency shaping therapy[5] trains stutterers to speak with relaxed breathing, vocal folds, and lips, jaw, and tongue. A study tested stutterers before and after fluency shaping therapy, finding left-hemisphere activity, although large areas of activation in the right hemisphere remained. No specific changes were seen in the left caudate nucleus.[Kroll1997]

This left caudate nucleus overactivity appears to be related to the neurotransmitter dopamine. Speculatively, if stutterers' left caudate nucleus is too sensitive to dopamine, then this would explain why dopamine antagonist medications reduce stuttering (see the chapter Anti-Stuttering Medications[6]).

Speculatively, if stutterers' left caudate nucleus is too sensitive to dopamine, then varying levels of dopamine would explain the "good days, bad days" phenomenon, in which stutterers have days with relatively fluent speech, and other days when they "can't get a word out."

For more about dopamine, see Wikipedia article Dopamine[7] or the book The Edge Effect, by Eric Braverman (ISBN 1402722478).

4 Chapter 24 on page 99
5 Chapter 18 on page 69
6 Chapter 25 on page 101
7 http://en.wikipedia.org/wiki/Dopamine

4.4 Tourette's and Stuttering

Three genes that correlate with stuttering also correlate with Tourette's Syndrome (see the chapter Genetics of Stuttering[8]). Tourette's and stuttering have many commonalities, suggesting that the neurology of Tourette's may shed light on the neurology of stuttering. Stuttering happens frequently in Tourette's syndrome. Many of the medications that help control tics also help stuttering. Abnormalities in the basal ganglia and the cortical motor systems may be shared by both disorders.

- Tourettec tics and stuttering disfluencies are embarrassing.
- The more a Touretter tries not to make a certain movement, or a stutterer tries not to stutter, the less he or she can control the behavior.
- Touretters control the disorder by substituting more-acceptable tics. Stutterers substitute words they can say.
- Both Touretters and stutterers enjoy support groups, where they can "let go" and move or stutter without embarrassment.
- Environmental cues can "switch off" Tourette's and stuttering temporarily. E.g., a surgeon with Tourette's has tics everywhere but the operating room.[Sacks1996]
- Stress can "switch off" Tourette's and stuttering temporarily.
- Dopamine-blocking medications, such as Haldol, reduce both stuttering and Tourette's.
- Both disorders run in families.
- The prevalence of Tourette's and adult stuttering is similar.
- Both disorders originate in childhood.
- Both disorders can be disabling, but Touretters and stutterers who achieve success say that their disorder was a gift.

To learn more, see the Wikipedia article about Tourette's syndrome[9]. Or invite a Tourette's support group to meet with your stuttering support group.

4.4.1 A Trigger for Tourette's

Why do some individuals with these three genes develop stuttering, while others develop Tourette's or OCD, and still other individuals with these genes develop none of these disorders?

In a subgroup of individuals with Tourette's, a childhood autoimmune "trigger" leads to Tourette's. A childhood streptococcal infection can cause a child's immune system to attack brain cells in the putamen area.[Singer1998] The putamen controls gross (large) muscle movements. Excessive dopamine in the putamen area of the brain is associated with Tourette's. The child recovers from the fever, but then develops Tourette's.

For more about this controversial hypothesis, see P.A.N.D.A.S.[10]. No one has suggested that stuttering is a PANDAS disorder, but the three PANDAS disorders (Tourette's, OCD, and tics) are genetically linked to stuttering, so perhaps PANDAS shouldn't be ruled out in the development of stuttering.

8 Chapter 5 on page 21
9 http://en.wikipedia.org/wiki/Tourette%20syndrome
10 http://en.wikipedia.org/wiki/P.A.N.D.A.S.

Tourette's involves a *genetic* predisposition and an *autoimmune* trigger leading to a *neurological* abnormality. Combined with later *psychological* issues, Tourette's is a *multifactoral* disorder. Because only some individuals with Tourette's developed the disorder from this autoimmune trigger, Tourette's has *multiple development pathways.*

4.5 "Good Days, Bad Days"–and the Anti-Stuttering Diet

Stutterers have "good days"–with less stuttering–and "bad days"–when they can't get a word out. The "good days/bad days" syndrome may be due to varying levels of dopamine in the brain.

Dopamine is affected by several factors, including diet. Dopamine is produced from the amino acids phenylalanine and tyrosine. Both amino acids are components of protein. Meat sources of protein have more tyrosine than plant sources of protein. The exception is wheat germ, which is high in tyrosine. The foods highest in phenylalanine are soy and fish.

A vegetarian, wheat-free, low-protein diet should lower dopamine levels. I tried this. I stuttered less, but felt sluggish and depressed. I'd rather eat protein, feel mentally alert, and stutter.--Thomas David Kehoe[11] 05:06, 28 March 2006 (UTC)

Concepts involving dietary modifications have never undergone scientific study in stuttering and this is unlikely to significantly alter dopamine synthesis. Reducing dopamine synthesis may be detrimental to other neurophysiological processes. Pharmacological agents are a much more effective way of modulating dopaminergic activity. The ideal drug would be a dopamine receptor modulator that is precise enough to modulate dopaminergic activity without causing detrimental neurological side effects, but such medications don't currently exist. Aripiprazole is the first drug to have some properties similar to a dopamine receptor modulator, but its metabolite acts as a full dopamine antagonist, negating the selective modulating activity of aripiprazole itself.

4.6 More Stuttering Brain Scan Studies

Different studies found different results because a variety of technologies were used (EEG vs. SPECT vs. PET, H2150 vs. FDG). Most studies were small, usually a half-dozen stutterers. The subjects were usually right-handed men — women and left-handed men may have different cerebral activity.

- Salmelin, 1998: "Neuromagnetic responses to monaural tones [found that] the basic functional organization of the auditory cortices was found to be different in stutterers and controls... and more severely by self-paced [stuttered] than accompanied [fluency induced by the chorus effect] speech."[Salmelin1998]
- Braun, 1997: Language processing shifted to the right hemi-sphere, including the dorsolateral prefrontal cortices, middle temporal gyrus, and anterior cingulate cortex. Motor function shifts to the right hemisphere, including the "anterior fore¬brain regions and associ¬ated archicortical paralimbic areas." Visual processing also appeared to shift to

11 http://en.wikibooks.org/wiki/User%3ATdkehoe

the right hemisphere. Decreased sensory perception, including post-rolandic sensory areas and related paleocortical paral¬imbic regions. Increased somatosensory processing (sensation of the body), including the "dorsal region of the angular gyrus, adjacent to the superior parietal lobule, as well as somatosensory association cortices in the medial SPL."[Braun1997]

- De Nil, 1995: During silent reading, increased activation in the left angular cingulate cortex, a "reflection of covert anticipation of stuttering." [DeNil1995]
- Ingham, 1996: "Present findings do not support recent suggestions that developmental stuttering is associated with abnormalities of brain blood flow at rest. Rather, our findings indicate an essentially normal functional brain terrain. . . "[Ingham1996]
- Ingham, 1997: "Diffuse overactivity throughout the cerebral and cerebellar motor systems. . . Deactivation of a verbal production circuit between left frontal (BA47) and temporal (BA22) cortex that has been previously identified in normal speakers."[Ingham1997]
- Kalinowski, 1997: Some stutterers showed the greatest reduction in the temporal-parietal area, and others showing greatest reductions in the right hemisphere posterior sites.[Kalinowski1997]
- Kroll, 1997: After fluency shaping stuttering therapy there is increased left-hemisphere activity, although large areas of activation in the right hemisphere remain.[Kroll1997]
- Watson, 1994: Abnormal right-hemisphere activity only in stutterers who also had language deficits.[Watson1994]

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5 Genetics of Stuttering

5.1 Dopaminergic Genes

Three genes associated with the neurotransmitter dopamine[1] correlate with five disorders: ADD/ADHD[2], stuttering, Tourette's syndrome[3], obsessive compulsive disorder[4] (OCD), and tics[5].[Comings1996] All five disorders involve a combination of stress and movement:

- Persons with ADD/ADHD have normal brain activity when resting, but when they try to concentrate on a task, they have reduced prefrontal cortex blood flow, which reduces their ability to concentrate.[Amen] Persons with ADHD (mostly children) then become hyperactive and can't sit still.
- Tics cause a muscle, often in your face, to move rapidly and uncontrollably. Stress usually makes the tic uncontrollable.
- Individuals with OCD repeatedly perform physical tasks, e.g., hand-washing. Stress usually makes this behavior uncontrollable.
- Individuals with Tourette's syndrome compulsively touch objects (e.g., floors or walls) or make stereotyped movements or noises. Stress usually makes the movements uncontrollable.
- Stuttering is excessive speech-production muscle activity resulting in blocked, prolonged, or repeated sounds. Stress usually makes the stuttering uncontrollable.

All five disorders manifest most strongly–and are most difficult to control–in high-stress situations. These disorders may all be stress reducers that work for a few moments but then cause greater stress, resulting in cyclical abnormal behaviors (see the section Stress-Related Changes[6]).

Why do some individuals with these three genes develop stuttering, while others develop Tourette's, while still others develop other disorders, or no disorder at all? In a subgroup of individuals with Tourette's, a childhood automimmune "trigger" leads to Tourette's. A childhood streptococcal infection causes a child's immune system to attack brain cells in the putamen area.[Singer1998] The putamen controls gross (large) muscle movements. Excessive dopamine in the putamen area of the brain is associated with Tourette's. The child recovers from the fever, but then develops Tourette's.

Speculatively, a similar autoimmune disorder involving the left caudate nucleus speech motor control area could trigger childhood stuttering.

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1 http://en.wikipedia.org/wiki/Dopamine
2 http://en.wikipedia.org/wiki/ADHD
3 http://en.wikipedia.org/wiki/Tourette%27s
4 http://en.wikipedia.org/wiki/Obsessive-compulsive%20disorder
5 http://en.wikipedia.org/wiki/Tic
6 Chapter 7.2 on page 31

5.2 Stuttering Families

In 2005, researchers announced that almost half the family members stutter in several extended families in Cameroon, Africa. The lead researcher said, "These families provide hope that we'll be able to identify the gene that appears to be at work to cause stuttering in these families."[Drayna2005]

A 1940 study investigated five generations of an Iowa family, with stuttering in all generations. In the third generation, three of four children in one family stuttered. When these children grew up, three moved to Kansas and lost contact with the sibling remaining in Iowa. Of the descendants of the woman remaining in Iowa, 40% stuttered. Of the descendants of the Kansas siblings, only 6% stuttered.

The researcher concluded that the Iowa family had a "tone" that was conducive to stuttering. The hypothesis was that this family believed that stuttering was inherited, so they anxiously watched their children looking for signs of stuttering, and this fear of stuttering in the parents caused the children to stutter.

In 1960, another researcher studied the next generation of the family. Only 2% of these children stuttered, and the researcher reported that there had been a change in the familial assumptions and attitudes about stuttering.[Bloodstein1995]

In 1940, speech-language pathologists believed that stuttering was caused by parental reactions to normal childhood dysfluencies. The Iowa family "proved" what the speech-language pathologists believed. In 2005, speech-language pathologists believe that stuttering has a genetic cause, and the Cameroon families are expected to prove this hypothesis. In 1986, a speech-language pathologist re-examined the 1940 Iowa study and concluded that, "genetic transmission has been judged to provide an equally viable explanation for the data."[Wingate1986]

At least 25 studies have investigated family patterns in the incidence of stuttering. The results vary widely. Most studies are contradicted by other studies.

Between 20% and 74% of stutterers say they have a relative who stutters. But other studies found that 1% to 42% of *non*-stutterers said they have a relative who stutters.[Yairi1996] In other words, many stutterers and many non-stutterers say they have relatives who stutter. One study found that if you stutter, you are about three times more likely to have a close relative who stutters.[Andrews1983]

Studies of the families of stutterers failed to find simple Mendelian types of inheritance, such as sex-linked, autosomal dominant, or recessive.

A study of children aged 2 to 6 found that more than two-thirds of stuttering children have relatives who stutter. This study found that male and female children were equally likely to have relatives who stutter. This study also found that stuttering was more likely in first-degree relatives than in second- or third-degree relations.[Ambrose1993]

5.3 Twin Studies

A half-dozen studies of twins have found that concordance for stuttering (both twins either stutter or don't stutter, rather than one twin stuttering and the other not stuttering) is much more likely in identical twins than in fraternal twins. The exact numbers vary between studies, in part because some studies only looked at same sex twins (a male and female fraternal twin pair is unlikely to both stutter because males are more likely to stutter than females).[Yairi1996]

On the other hand, a study of 95 pairs of identical twins reared apart found 5 stutterers (2% of the subjects, the expected prevalence). None of their twins stuttered. This is in spite of finding similarities in talkativeness, pitch, and hoarseness, as well as tastes in clothing, books, etc. This suggests that stuttering is not genetic.[Bloodstein1995]

5.4 Relatives of Female Stutterers

Several studies have found that female stutterers are more likely than males to have relatives who stutter.[Yairi1996] This suggested that the few females who stutter might have a stronger genetic component in their families. Analogously, men are more likely to be tall than women, but tall women are more likely to have tall relatives.

However, another study of adult stutterers "did not find that relatives of female [stutterers] were more likely to stutter than relatives of the male [stutterers]."[Janssen1996]

5.5 Stuttering Related to Other Factors

Studies of the family incidence of stuttering have compared left-handed stutterers to right-handed stutterers, speech motor skills, anxiety, and reading ability. Familial differences were found only for speech motor skills.

Two studies of birth or developmental trauma had contradictory results. A study of adults suggested that there are two causes of stuttering: genetic, and trauma or illness. A similar study of children who stutter reached the opposite conclusion.

Two studies found that severe stutterers were no more likely than mild stutterers to have relatives who stutter. Two more studies found no familial differences between recovered and persistent stutterers.[Yairi1996]

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9 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

6 Physiology, Psychology, and Personality of Stutterers

6.1 Physical Studies

Many studies have found that stutterers have normal physiological characteristics, such as heart rate and blood pressure.

6.2 Psychological Studies

> "Whatever the source of stuttering is, it is not amenable to the treatments I have developed. I therefore refuse to deal with it further." –Sigmund Freud

Many studies have tried to tie stuttering to a psychological or personality problem. The only psychological trait common to stutterers is fear and anxiety around speaking tasks, such as ordering in a restaurant.

6.3 Parental Attitudes and Behaviors

Many studies have tried to tie stuttering to parental attitudes and behaviors. The only trend is that poor, uneducated, dysfunctional families are more likely to have children who stutter. Likely the only parental behavior that contributes to childhood stuttering is not taking children to see a speech-language pathologist for therapy.

6.4 Intelligence

College students who stutter are more intelligent than college students who don't stutter. However, any person with a disability has to be especially intelligent and motivated to attempt college work. This doesn't mean that stutterers in general are more intelligent.

Stuttering among mentally-retarded individuals appears to be far higher than the general population. In Down Syndrome, prevalences from 21% to 45% have been reported. This is likely because mentally-retarded children and adults are more likely to fail at therapy– stuttering therapies require intelligence and mental effort.

6.5 Language Studies

Many studies have examined stutterers' language skills. Whether children who stutter started talking later has not been established. School-age stutterers have normal language skills, as measured by standard tests. However, advanced tests such as understanding words played backwards suggest that stutterers may have an auditory processing disorder.

6.6 Recommended Books

- A Handbook on Stuttering, by Oliver Bloodstein (1995, ISBN 1565933958)

Category:Speech-Language Pathology[1]

1 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

7 Belief-Related Changes in Stuttering

7.1 Adaptation and Anticipation

In 1937, Wendell Johnson conducted a series of tests of adaptation and anticipation, in which stutterers repeatedly read a passage out loud:

1. Johnson marked the stuttered words in the first reading. In the second reading, of an unmarked copy, the stutterer was asked to read only words on which he did not expect to stutter. This eliminated 98% of stuttering. The 2% of stuttering was on words which were stuttered in the first reading. In most cases, the stutterer afterwards said he knew he would stutter on the word, but failed to follow the instructions not to read it.
2. The stutterer marked the words in the text on which he expected to stutter. He then read the passage out loud 15 minutes later, and a second time the next day. In both cases stuttering occurred on about 50% of the marked words, and on about 10% of the unmarked words. In 1975, Wingate repeated this experiment but altered the sequence of the words, and found little relationship between anticipated and stuttered words.
3. Johnson noted the stuttered words as each stutterer read a passage ten times repeatedly. Most subjects stuttered on the same words in each reading. This showed that developmental stutterers stutter on certain words, and say other words fluently. In contrast, some forms of neurogenic stuttering may have random stuttering on any word. Later researchers tried to make the subjects forget which words they'd stuttered on, by reading other material, or by waiting several weeks between readings. Stutterers continued to stutter on the same words.
4. Johnson increased stuttering by having the person read to an audience or by other means. Later, the person read out loud to one person. Stuttering increased on passages with cues associated with the audience reading, such a colored border on the page or a similar subject matter. Johnson theorized that the colored border reminded the person of previous stuttering.
5. Johnson blacked out the stuttered words in heavy pencil, and the stutterer skipped those words. For some subjects, this eliminated stuttering, but most subjects then stuttered on new words. These new stuttered words were adjacent to the blacked-out words.
6. Johnson had stutterers silently read a passage twice, several weeks apart, and mark words they expected to stutter on. Stutterers marked the same words each time.

Johnson theorized that stutterers associate a word with past stuttering or failure (a cue). These studies show that certain words are stuttering cues for individual stutterers, just as certain speaking situations can cue an individual to stutter.

In 1971, Rappaport and Bloodstein[Bloodstein1995] repeated Johnson's fifth experiment, but divided subjects into two groups, and added a second test. In the second test, random

words had been blacked out. The subjects who did Johnson's test first and then read the random test stuttered on the words adjacent to the blacked-out words. The subjects who read the random test first did not stutter on adjacent words. The stutterers were trained to stutter to a new cue–blacked-out words.

7.2 Does Distraction Reduce Stuttering?

According to some speech pathologists, "Distraction methods can be used to eliminate stuttering temporarily"[Kuehn1994]. But if distraction worked, stutterers would work a Rubik's cube or play a pocket video game whenever they wanted to talk fluently. Distraction does not reduce stuttering:

- Distraction from speech-production muscle tension. This is believed to be the origin of secondary symptoms. Tensing non-speech muscles (e.g., eye blinking, foot-stamping) distracts attention from vocal tension. The stutterer may relax his speech muscles momentarily and the word pops out. But he will soon block again, and if he continues to do the secondary behavior it will become habitual. It will also become ineffective. Distraction from vocal tension is ineffective.
- Distraction from anticipation of stuttering. Wendell Johnson showed that stutterers know which words they will stutter on. If this anticipation could be distracted, maybe the person wouldn't stutter on those words? A 1982 study had stutterers step on and off a 10-inch platform while reading out loud.[Bloodstein1995] A 1985 study had stutterers manually track an irregular line on a rotating drum while speaking.[Bloodstein1995] Neither distraction was able to reduce stuttering. Another study[James1981] had nine adult stutterers take a 10-second "time-out" after disfluencies, while a control group of nine stutterers got random 10-second "time-outs." "Time-outs" after disfluencies reduced stuttering 46%. Random "time-outs" had no effect on stuttering, proving that "time-outs" do not reduce stuttering via "distraction." These three studies show that distraction from anticipation is ineffective.
- Distraction from the fear of stuttering. There are many stories of a stutterer being "too scared" to stutter (see the section below "Does Stress Increase Stuttering?"). This is a real and fascinating phenomenon, but has no practical value as a therapy for stuttering. For example, we could train a Rottweiler to attack you whenever you stutter. If you brought the dog with you everywhere you went, this might cure you of stuttering, but it would be a cure worse than the disorder.
- Increasing attention to one aspect of speech may reduce attention to other aspects of speech. For example, speaking in a foreign accent requires careful attention to your articulation. Other examples of increased attention may be to relaxed breathing or to speaking slower. These techniques can be effective, but the effectiveness is from increased attention to a fluency-enhancing aspect of speech, not due to distraction or decreased attention to fluency-inhibiting aspects of speech.
- Distraction causes stuttering, when stutterers use therapy techniques. When learning to use a new motor skill, the inhibition of other neuronal linkages is as important as the development of the target neural linkage: "Each motor engram is a pathway of excitation surrounded by a wall of inhibition."[Kottke1978] A golfer must keep her eye on the ball. Tennis pros are infamous for demanding silence from fans. Stutterers often say that

they can use therapy skills in a clinical environment, but the distractions of normal conversations make fluent speech difficult.

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Category:Speech-Language Pathology[1]

1 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

8 Stress-Related Changes in Stuttering

Under stress, people's voices change. They tense their speech-production muscles, increasing their vocal pitch. They try to talk faster. They repeat words or phrases. They add interjections, such as "uh." These are *normal dysfluencies*. A study found that under stress, non-stutterers went from 0% to 4% dysfluencies, for the simple task of saying colors. Stutterers went from 1% to 9%.[Caruso1994a]

The "conventional wisdom" is that stutterers are always nervous or stressed out. Many psychological studies have proven that this isn't true. But stress has an important role in stuttering.

This next fact is so obvious that you've probably never thought about how important it is. All stutterers can talk fluently. In relaxed, low-stress situations we can say any sound or word fluently. If you're a severe stutterer, there might not be many such situations. But there are some.

In other situations we stutter. How many paraplegics do you know who can walk in some situations, but not other situations? Or people who are blind with certain people, but not with other people? None that I've ever known.

Think about this. Our brains are capable of producing fluent speech. We have all the speech motor programs necessary to produce any speech sound, fluently.

We also have speech motor programs for producing dysfluent sounds. Stutterers have two sets of open-loop speech motor programs[1]. Our brains *select* one or the other set of speech motor programs, depending on *environmental cues*–where we are or whom we're talking to.

This is like a person who grew up summers in Massachusetts and winters in Georgia. Such a person would have a set of speech motor programs to speak with a New England accent. And this person would have a set of speech motor programs to speak with a Southern accent. When she's in Massachusetts, hearing people speak with New England accents, her brain automatically selects the New England accent speech motor programs. In Georgia, her brain selects Southern accent speech motor programs.

You always have choices for handling stressful situations. Some choices trigger your brain to automatically select dysfluent speech motor programs. Other choices trigger your brain to select fluent speech motor programs. This chapter will teach you to make choices for

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FOpen-%20and%20Closed-Loop%20Speech%20Motor%20Control%23Open-Loop%20Motor%20Control

handling stress that automatically select fluent, relaxed speech. You'll feel relaxed and speak confidently even when non-stutterers are stressed out.

8.0.2 Are Responses to Stress Psychological?

According to "conventional wisdom," stuttering is a psychological disorder because stutterers generally speak fluently in low-stress situations, and stutter in high-stress situations.

But many responses to stress are physical. E.g., "fight or flight" increased heart rate. Stress is considered to be a factor in the development of physical disorders, such as heart disease, and a primary factor in gastrointestinal disorders. Why is stuttering considered to be a psychological disorder, but stomach ulcers are considered to be a physical disorder?

This chapter presents how stuttering is a response to stress, and then presents psychological treatments for better handling stress. Although the presented treatments are psychological, I object to referring to responses to stress as psychological responses. You can treat responses to stress physically, such as with medications or using an anti-stuttering device. I've put those treatments into other chapters. Perhaps more than the other factors, responses to stress show that the factors that contribute to stuttering are complex and interconnected.

8.0.3 Stuttering Reduces Stress

Systolic blood pressure is an indicator of stress. Stuttering reduced stutterers' blood pressure 10%. In contrast, fluent speech, chewing gum, and sitting quietly each reduced blood pressure about 2%.[Perkins1973]

You're thinking, "No way. Stuttering doesn't relax me. Stuttering doesn't feel like a massage and warm bath."

But think about it. Stutterers are, on average, disfluent on 10% of syllables. We say 90% of syllables fluently. But we don't say one hundred syllables fluently, and then finish a conversation with ten dysfluencies. Stuttering usually occurs on the first sound of the first word, in a stressful situation. I.e., your stress builds up as you anticipate speaking. You stutter, and this releases stress. You then say several syllables fluently.

You then stutter on another syllable, then say several more syllables fluently. Usually your speech improves over the course of the conversation, and your last few sentences are your most fluent.

If your blood pressure were monitored in such a conversation, it might look like this (this is speculative, not based on research):

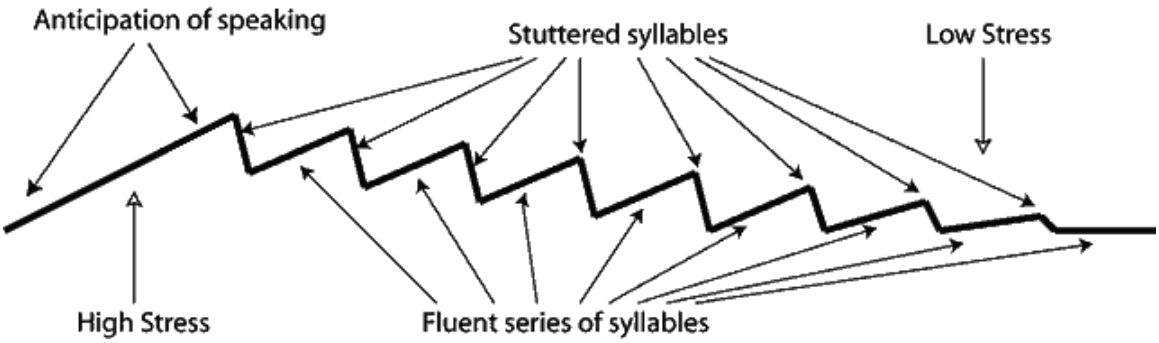

Figure 1

Stuttering Reducing Stress

Your stress increases as you anticipate speaking. You block on the first syllable. This reduces your stress, and you speak fluently. Your stress builds up again, and you stutter again. This reduces your stress, and the cycle repeats until you're speaking fluently at the end of the conversation.

Stuttering Isn't a Good Response to Stress

Stuttering doesn't change the stressful situation. E.g., a highway patrol officer pulls you over for speeding. Stuttering won't make the officer think you weren't speeding.

Stuttering might make the situation worse. E.g., the highway patrol officer mistakes your stuttering for methamphetamine addiction. He handcuffs you and searches your car. This stresses you more, and you stutter more.

Stuttering and stress are a vicious cycle. Stuttering reduces your stress for a few seconds, but then causes more stress. You get stuck in the cycle, unable to break free.

Another study measured *listeners'* systolic blood pressure. Listening to stuttering made listeners feel stress.[Schwartz] The listeners' increased stress may in turn increase the stutterer's stress. Again, stuttering and stress start a vicious cycle.

This chapter will show you that you have other choices for handling stress, instead of stuttering. These other choices reduce stress, instead of throwing you into an endless cycle.

8.0.4 Distraction and Placebos

The "experts" believe that "Distraction methods can be used to eliminate stuttering temporarily."[Kuehn1994] But if distraction worked, stutterers would work a Rubik's cube or play a pocket video game whenever they wanted to talk fluently.

Two studies tried to distract stutterers from stuttering. In the first study, stutterers stepped on and off a 10-inch platform while reading out loud. In the second study, stutterers manually tracked an irregular line on a rotating drum while speaking. Neither distraction was able to reduce stuttering.[Bloodstein1995a]

Distraction can cause stuttering. Stutterers often say that they can use therapy skills in a clinical environment, but the distractions of normal conversations make fluent speech difficult.

An "expert" wrote, "if a stutterer were to forget that he was a stutterer, he would have no further difficulty with his speech."[Bloodstein1996] Another "expert" wrote, "our beliefs about stuttering seem to be one of the main factors in stuttering severity."[Neiders1997]

Placebos are pills without medications, or, more generally, an inactive, nonspecific medical treatment that alters the beliefs of a patient. A study found that placebos did not reduce stuttering.[Prins1980] Another study also found that placebos had no effect on stuttering–but the placebos caused terrible side effects! Reported placebo side effects included constipation, sexual dysfunction, dizziness, sweating, and tremors. The placebo was six times more powerful than the medication in the study, in producing side effects.[Stager1995]

This raises an interesting question. Placebos are effective treatments for almost every disease and symptom:

> Study after study showed that, for virtually any disease, a substantial portion of symptoms–roughly one-third, by most estimates–would improve when patients were given a placebo treatment with no pharmacological activity. Patients simply believed that the treatment would help them, and somehow, it did.[Goleman1993]

> for a wide range of afflictions, including pain, high blood pressure, asthma and cough, roughly 30 to 40 percent of patients experience relief after taking a placebo placebos seem to be most reliably effective for afflictions in which stress directly affects the symptoms pain, asthma and moderate high blood pressure can become worse when the patient is upset placebos may work in part by lessening the apprehension associated with the disease [because] the immune system falters under stressful conditions.[Brown1998]

Stuttering may be the only disorder that placebos have no effect upon! I.e., stuttering isn't affected by belief, and stutterers can't be "psyched" into fluency. In contrast, heart disease, asthma, etc. appear to be physical diseases but are actually in large part psychological. Could stuttering–long believed to be psychological–actually have no psychological component?

8.1 Good Stress, Bad Stress

We experience many forms of stress. Some forms of stress reduce stuttering. Other forms of stress increase stuttering. Still other forms of stress have no effect on stuttering.

Adrenaline and Fluency-Enhancing Stress

In World War Two, a severe stutterer regularly spoke fluently for mortar communication during combat.[Bloodstein1995b]

One night, a person physically threatened me for several hours. I've never been so fluent in my life! My voice was calm and relaxed as I tried to get the person to calm down.

Noradrenaline and adrenaline compete with dopamine for the binding sites on D4 receptors, and when bound, act as agonists. At the same time, through feedback inhibition, nore-

pinephrine inhibits tyrosine hydroxylase, which in turn inhibits the production of dopamine. Because dopamine in the striatal system increases stuttering (see Genes and Neurotransmitters[2], and adrenaline blocks dopamine, "fight or flight" situations that increase adrenaline reduce stuttering. [Newman1997]

Stutterers report that when the adrenaline wears off, their stuttering increases.[Bloodstein1995c]

Physiological Stress

Physical activities such as running or bicycling elevate heart rate, blood pressure, etc. Dropping a rock on your foot is another form of physiological stress.

Exercise makes you breath harder, with your diaphragm. If your stuttering involves disordered breathing you may stutter more when exercising. On the other hand, if your speech-language pathologist trained you to speak with diaphragmatic breathing, exercise may improve your fluency.

In general, physiological stress has no effect on stuttering.

Progressive relaxation trains you to relax all of your muscles, starting with your toes and ending with your facial muscles. Progressive relaxation has minimal effect on stuttering. Relaxation exercises only reduce stuttering when the focus is on relaxation speech production muscles (respiration, vocal folds, and the lips, jaw, and tongue articulators).

Cognitive Stress

Hearing or seeing several things at once, especially if the events contradict each other (*cognitive dissonance*), increases stuttering.

For example, I can't stand talking to a person who's watching television. Or a person who's playing guitar, or picks up the phone to make a call while I'm trying to talk to him. I have a cousin who watches TV, plays guitar, and makes telephone calls, all at the same time, when I to talk to him. He thinks he's making efficient use of his time, but he wastes my time.

Listeners should give their full attention to stutterers. Turning away to do something else, even if you say, "I'm still listening," will increase the individual's stuttering.

If a listener won't give you his or her full attention, consider whether the conversation matters to you. If not, walk away. Don't consider whether what you're saying is important to the listener. It's obviously not.

Time Pressure

Time pressure increases stuttering. At the beginning of this chapter I mentioned a study in which subjects were told to say colors.[Caruso1994b] At first, "red" was written in red on a computer monitor. The screens came faster and faster, to increase time pressure.

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FGenes%20and%20Neurotransmitters

Next, cognitive stress was added. E.g., the word "red" was written in yellow on a computer monitor. The subjects had to say "yellow," not "red."

These results were dramatic. Non-stutterers went from 0% dysfluent words, to 2% disfluencies with time pressure, then to 4% with time pressure and cognitive stress.

Stutterers went from 1% stuttered words, to 3% with time pressure, to 9% with time pressure and cognitive stress.

Telling a stutterer to talk faster will have the opposite effect. Instead, tell stutterers to take all the time they need.

Use time pressure to your advantage by limiting what you say. Tell most people to make a five-minute speech and they ramble on for ten minutes, without getting to the point. If you're asked to make a five-minute speech, get to the point in one minute, without the rambling. What you think is one minute will actually take two or three minutes, and then adding in stuttering will make it five minutes. Even when I stuttered severely I had professors compliment my presentations.

Pragmatic Speech

Pragmatic speech is intended to cause another person to do a specific action. This might be telling a co-worker how to send a fax. Don't say, "Let me do it for you."

More stressful is asking someone to do something you want, when you're afraid that the person will say no. E.g., asking your boss for a raise, or asking an attractive person out on a date, or telling your housemate to wash the dishes. The listener is relatively powerful, and you're in a position of relative weakness.

To reduce stress, we usually try to make the question look casual. You "just happen" to run into the attractive person at the health club, and you "just happen" to have tickets to a show in your pocket, and you "casually" ask for a date. Or you wait until you've just landed a big sale for the company, and "jokingly" tell your boss that you deserve a raise.

But then you stutter, belying that this "casual" conversation is stressful for you. Your listener recognizes your weak position and, if he or she has an ego problem, enjoys manipulating you. A powerful person with an ego problem manipulating you is a pretty good description of stress. Instead, use other ways to reduce stress. First, don't make a big effort to set up a "casual"-seeming situation. The more effort you make, the more stress you'll feel that it's "now or never" to get a positive response.

Next, use Winston Churchill's strategy[3] of preparing your points in advance ("I deserve a raise for three reasons[NEL]"), anticipating your listener's objections, and preparing responses to those objections. Then use slow speech to explain each point. Pause between points. Use the pause to check that your breathing and vocal folds are relaxed. You'll sound confident and in control.

3 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FBritish%20Royals%20and%20Commoners%23Winston%20Churchill%20and%20Aneurin%20Bevan%2C%20Statesmen

Lastly, be willing to walk away. Is it the end of the world if your housemate doesn't wash the dishes, or you don't get a date? Visualize what you'll do and how you'll feel if the answer is no.

8.1.1 Be an Anti-Mirror

People tend to mirror each others' speech patterns. A person speaks fast to you, so you talk fast. A listener jumps in before you finish your sentences, so you interrupt her sentences. A person gets angry at you, so you raise your voice and get emotional.

All of those speech patterns increase stuttering. Instead, be an anti-mirror. The faster people speak to you, the slower you talk. Instead of interrupting, wait for the other person to finish speaking, then count to three before you start to talk. If a person expresses anger, make your voice quieter, slower, and less emotional.

Embarrassment and Uncertainty

We fear embarrassment. E.g., I'm about to call you Josh, when I think, "Wait, his name is Joel."

This fear is multiplied when we're speaking to more than one person–saying something embarrassing in front of an audience of a thousand people is more embarrassing than in front of one person.

Lack of feedback increases our fears of embarrassment. I.e., when speaking on television we can't observe the reactions of listeners. You could say something stupid and never know it. You try to remember and analyze the last thing you said while you're saying something else.

If you say something embarrassing, make a joke out of it. E.g., I was waiting for a woman I'd never met. She said she'd arrive at 6pm. At 6:05pm a woman parked in front of my house. I went out and said, "You must be Ariana." She didn't say anything so I said it again. She responded that she wasn't Ariana. I said, "Oh my God, I'm so embarrassed," in a humorous way.

Then there's always the "at my advanced age I can't remember names." That's funny whether you're 90 or 19.

That sounds obvious, but there's a subtle point in there. Acknowledging embarrassment ends embarrassment.

Establishing Status

We communicate status largely via speech. We feel anxiety when status is ambiguous.

E.g., you find a large, muscular hoodlum sitting on your car. Do you speak with firm authority, ordering the hoodlum off your car? Do you choose a friendly, buddy-buddy tone of equality? Do you meekly ask if the hoodlum could let you have your car back?

Stuttering doesn't necessarily communicate low status. Embarrassment and anxiety about stuttering communicates low status. Calmly stuttering, while looking the hoodlum in the eye, establishes that you're not afraid to stutter and you're not afraid of the hoodlum.

Moral Stress

You did something wrong. You didn't realize it was wrong at the time, but now you're suspected of this minor crime. You make up a lie to eliminate the suspicion. But your lie is caught. Now you're in real trouble.

I'm not going to preach whether "honesty is the best policy" or whether lying your way out of situations sometimes works. What I'll tell you is how to use stuttering to appear to be telling the truth. Interrogations start with "baseline" questions such as your name. But every stutterer blocks on their name! Get into some good dysfluencies on your name. Imagine yourself hooked up to a lie detector machine. Make the needle swing into the red.

Then when you're asked the real question, pause, relax your breathing and your vocal folds, and slowly and fluently tell your story–truthfully or otherwise. A lie detector machine will indicate that you're telling the truth. A human listener will do the same.

Categorize Stress to React Rationally

Movies show characters in stressful situations. When watching movies, name the type of stress a character experiences. Soon you should feel an inner voice say "moral stress," or "time pressure" when watching movies.

Then the same light bulb will switch on in your mind when watching people in daily life. When the light bulb switches on in situations stressful to you, you're on your way to eliminating this type of stress.

Stress causes you to react emotionally, not rationally. When reacting emotionally, you react one way. Different people have different emotional reactions, depending on their personality type. E.g., one person might react with outward anger, when another person reacts with inward shame. That doesn't matter. What matters is the automatic, single response to all stressful situations.

Shifting out of an emotion and into "neutral" enables you to see other possible responses, and select the best response. The light bulb switching on enables you to switch gears.

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Category:Speech-Language Pathology[4]

4 `http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology`

9 Measurement of Stuttering

Measuring stuttering is notoriously difficult. You can measure several aspects of stuttering:

- Frequency of disfluencies. I.e., disfluencies per hundred words or syllables. The "average" stutterer is dysfluent on 10 percent of words. People who don't stutter are disfluent on about 2% of words.
- Duration of disfluencies. The "average" disfluency lasts about 1 second.
- Speaking rate, or word per minute. The average speaking rate for people who don't stutter is 167 words per minute (Darley, 1940). The average speaking rate for stutterers is 123 words per minute. The average stutterer speaks about 25% slower than the average non-stutterer.
- Types of disfluencies. Wendell Johnson developed eight categories of disfluencies in 1959. The first three are common to both stutterers and non-stutterers. The last five are stuttering disfluencies.
    1. Interjections ("uh," "er").
    2. Revisions ("I was - I am going").
    3. Incomplete phrases.
    4. Part-word repetitions ("ba-ba-ba-baseball").
    5. Word repetitions.
    6. Phrase repetitions ("I was I was going").
    7. Broken words ("I was g - (pause) - oing home").
    8. Prolonged sounds.
- Psychological effects.

The preferred test questionnaire for measuring stuttering is the "Stuttering Severity Instrument for Children and Adults," 3rd edition, by Glyndon Riley.

A study by Young in 1961 found that ordinary listeners judged stuttering to be "severe" when there were part-word repetitions, prolongations, broken words, and a new category, "undue stress or tension." But many speech samples were judged "severe" with relatively few of these disfluencies, suggesting that there are yet more, unidenti fied types of stuttering disfluencies.

There are many electronic instruments that can measure aspects of stuttering. See "Instrumentation For The Assessment And Treatment Of Stuttering", by Klaas Bakker (1996) and "Automatic Recognition of Dysfluencies" (Howell, 1997).

9.1 Problems Measuring Stuttering

1. Differences between judges. Different people listening to the same tape will hear different numbers of disfluencies, even if they are trained speech pathologists.

2. Counting normal disfluencies. Everyone has normal disfluencies. Does having lots of normal disfluencies make a person a stutterer? Or is stuttering something different? Should normal disfluencies be counted as stuttering?
3. Children vs. adults. Children stutter in different ways than adults: some disfluencies are normal for children but are abnormal in adults.
4. Hidden stuttering. Some stutterers can substitute words and appear to never stutter.
5. Speaking conditions. Some stutterers can read out loud perfectly fluently. Others stutter most severely when reading. Some stutterers are most fluent in conversation. Others are most disfluent. Some are most fluent in stressful situations, on telephones, etc., while others are the opposite. You can't judge how severely a person stutters from a single speaking situation.
6. Internal or psychological stuttering is difficult to quantify. For many stutterers the internal effects of stuttering are greater than their physical symptoms. Several stuttering therapies focus on improving the self-esteem and overall communication skills of stutterers, with little or no attention to improving physical fluency.

Different people stutter in different ways, and each person has multiple ways of stuttering. There is no single behavior common to all stuttering. Be skeptical when anyone claims that a therapy reduced stuttering 85%, etc. Ask how stuttering was measured, under what conditions, etc.

Category:Speech-Language Pathology[1]

1 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

10 Other Fluency Disorders

10.1 See also:

- Cluttering[1]
- Parkinson's speech[2]
- Essential tremor[3]
- Spasmodic dysphonia[4]
- Social anxiety[5]
- Broca's aphasia[6]

10.2 Head injuries and strokes

Head injuries[7] and strokes[8] can cause repetitions, prolongations, and blocks - some cases being the result of Broca's aphasia, and others being an acquired disorder of neurogenically-based stuttering. *Neurogenic* stutterers lack the same types of struggle behavior, and the fears and anxieties of developmental stuttering.

Developmental stutterers can fluently speak certain memorized phrases, such as the "Pledge of Allegiance." Neurogenic stutterers are disfluent on everything. Developmental stutterers can speak fluently in certain (typically low-stress) situations. Neurogenic stutterers are disfluent everywhere.

Stuttering therapy techniques and devices help some individuals with neurogenic speech disorders, but don't help others. Because different people have different areas of their brains injured, a treatment that's effective for one person may not be effective for another person.

1 http://en.wikipedia.org/wiki/Cluttering
2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FParkinson%27s
3 http://en.wikipedia.org/wiki/Essential%20tremor
4 http://en.wikipedia.org/wiki/Spasmodic%20dysphonia
5 http://en.wikipedia.org/wiki/Social%20anxiety
6 http://en.wikipedia.org/wiki/Broca%27s%20aphasia
7 http://en.wikipedia.org/wiki/Head%20injury
8 http://en.wikipedia.org/wiki/Stroke

10.3 Psychogenic stuttering

Rarely, traumatic experiences caused an adult to stutter. *Psychogenic* stuttering typically involves rapid, effortless repetitions of initial sounds, without struggle behavior.

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9 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

11 Research I'd Like to See

What research would you like to see? Use this page to suggest needed research into an overlooked area of stuttering. Or suggest old research that could be done better now with modern techniques.

To contribute to this page, first log in. Type your contribution, then sign it with two dashes and four tildes --~~~~. Then on a new line type <hr>. That puts a line (horizontal rule) between different people's contributions.

And please read Speech-Language Pathology/Stuttering/How to Participate in this Wikibook[1] before contributing material.

I'd like to see brain scans of stuttering children. Do stuttering children have the same neurological abnormalities that adult stutterers have? Did these children have these neurological abnormalities before they started stuttering? Or do stuttering children have no neurological abnormalities? At what age do the neurological abnormalities associated with stuttering develop?--Thomas David Kehoe[2] 16:57, 31 March 2006 (UTC)

Category:Speech-Language Pathology[3]

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FHow%20to%20Participate%20in%20this%20Wikibook
2 http://en.wikibooks.org/wiki/User%3ATdkehoe
3 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

12 Choosing a Speech-Language Pathologist

Read everything you can find about stuttering. Decide which therapy interests you. Even if a book costs over $40 don't be penny-wise and pound-foolish–the most expensive book is cheaper than the cheapest therapy.

Look for a board-certified Fluency Specialist at http://www.stutteringspecialists.org/specialists_-list.html[1]. There are about 100,000 speech-language pathologists in the United States, of which less than 500 are Fluency Specialists. Speech-language pathologists are trained in a wide variety of disorders. Most speech-language pathologists had one class, or maybe half of a class, in fluency disorders. Many speech-language pathologists have no training or experience with stuttering.

The Stuttering Foundation of America[2] ((`http://www.stutteringhelp.org`) or 800/992-9392) also has a list of recommended speech pathologists.

Or attend your local National Stuttering Association[3] (`http://www.nsastutter.org/` or 800/364-1677) support group, and ask people to recommend a speech pathologist.

If you have a serious complaint against a speech pathologist, call the American Speech-Language Hearing Association at (301) 897-5700.

12.1 Paying for Stuttering Therapy

Speech pathologists usually charge between $60 and $120 per hour. You may go two hours a week, for a few months, then one hour a week for a few more months, depending on your severity and progress. Your speech clinic may also have group therapy sessions, for about $25 for two hours. You usually do the group therapy for maintenance, after a few months of individual therapy. The total bill may be $2500 to $5000.

Few health insurance carriers pay for stuttering therapy. They may say that stuttering is a pre-existing condition, or that stuttering is not a medical condition.

Federal law requires that public schools provide speech therapy for children as young as three. In some states, this may continue up to 21, if you're in college.

If you are unemployed, you may get stuttering therapy paid by your state's vocational rehabilitation. If you are employed, ask your employer to pay part of your therapy costs.

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1 `http://www.stutteringspecialists.org/specialists_list.html`
2 `http://www.stutteringhelp.org`
3 `http://www.nsastutter.org/`

12.2 Most Speech-Language Pathologists Don't Like Stuttering

> One of the sad things about stuttering, that sad disorder of the human race, is that its victims far too often find themselves in the hands of a naïve rather than incompetent therapist.
>
> –Charles Van Riper

The American Speech-Language Hearing Association (ASHA) asked speech-language pathologists to rank 20 speech disorders in order of preference. Childhood stuttering was ranked in the middle. Adult stuttering was at the bottom. Speech pathologists dislike adult stuttering because they know little about it. Their lack of training makes them uncomfortable in treating stuttering. You may be the first stutterer your speech pathologist has ever seen.

A speech pathology professor wrote on the Internet:

> One of my students came to me and asked if I was serious about wanting them to go out and stutter [for a day]. She didn't want to do that. Another said she was sweating it out too. I had difficulty getting students to fake stuttering to get the feeling people who stutter have every day.

Category:Speech-Language Pathology[4]

4 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

13 Why Do Stutterers Avoid Speech Therapy?

Perhaps 90% of adult stutterers never seek treatment for their stuttering (see the chapter Incidence and Prevalence of Stuttering[1]).

Some stutterers don't know that stuttering treatments are available. Or a stutterer doesn't realize that more than one treatment is available: he tried one therapy, wasn't successful, and doesn't think of trying another therapy.

Stutterers are more likely to seek speech therapy at life changes–when starting college, when graduating from college, looking for a job, etc. When life is unchanging, stutterers see no reason to change their speech.

Getting stutterers to practice 20 minutes a day is difficult. Getting stutterers to use therapy techniques in conversations can be impossible. There are several reasons for this:

- Stuttering is a developmental disorder. You've stuttered as long as you can remember. People who start stuttering later in life (from a stroke or head injury) almost always seek treatment. To these people, the ability to talk is a major loss. But if you've never talked fluently, you don't know what you're missing. Stutterers may not consider that their stuttering is a problem.
- Denial–stutterers are embarrassed about stuttering, and so don't want to think about it. Failure at stuttering therapy can support denial–a stutterer goes to a therapy program, the therapy "doesn't work," and now he has an excuse to never try again.
- Some cultures assume that stuttering is "God's will" or punishment for misdeeds in an earlier incarnation. Other people assume that suffering is the human condition, and they live with difficulties rather than try to solve their problems.

  "Aristotle thought that slaves were the ordination of Nature–the devil of it was, the slaves thought so too."

Sally Ballard wrote about her fear of speech therapy for the British Stammering Association newsletter. After describing several bad experiences with speech pathologists as a child (due more to her temper than the speech pathologists), Ms. Ballard describes taking her children to a speech clinic:

> I am terrified of [my children] stammering. Even though it did not look as if they would stammer, I took them to a speech therapist. I was petrified of her. She told me that my children were fine, and asked me if I would like help for myself. I said thanks but no thanks, and almost ran out of the room.

1 Chapter 2 on page 7

> Years later, I realized that I could not carry on as I was [having her husband make telephone calls, walking because she couldn't tell the bus driver where to stop]Even though I was scared of speech therapists, I decided I had to get over my fearI worked out that it was two main things: the fear of being unable to gain respect [fear that speech pathologists would treat her like a child or a mentally-retarded person], and the fear of being a failure [and continuing to stutter].
>
> I went to my local health clinic and asked (eventually) to see a speech therapistI went into a flat panic. I could not decide what to do. What if they could not help me? What if I would always stammer or, worse still, what if she helped me overcome my speech problem? I would not have an excuse any more and, if I failed in life, I could no longer put it down to the fact that I stammered. I would have to accept the blame myself.
>
> When the fateful day of my appointment arrived, I was a nervous wreck. I wouldn't let my husband come with me in case I chickened out and didn't go at all, but in the end I went. My palms were sweating by the time I arrived

The speech pathologist taught Ms. Ballard to "stammer more fluently." The speech pathologist then asked how stuttering affected Ms. Ballard's life. She said that stuttering

> had stopped me from doing the one career that I wanted. Teaching. With terrific support from my husband, children, friends, and my speech therapist, I applied to the local college

Despite rejections from several universities because of her stuttering, Ms. Ballard eventually was accepted. She concluded,

> Never give up. If things don't go the way you wanted them to, don't look on the down side of life. Try to look at all the things you have achieved in life. Everyone will be surprised at how much that really is.

For those who do not have access to speech therapy or wish to work on their own, read *Self-Therapy for the Stutterer* by Malcolm Fraser available from the Stuttering Foundation of America (www.stutteringhelp.org or 800-992-9392).

Category:Speech-Language Pathology[2]

2 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

14 Stuttering Therapies for Pre-School Children

14.1 Indirect Therapy

Indirect therapy is a "gentle nudge." Indirect therapy changes the *parents'* speech and behaviors. The speech-language pathologist trains the parents to slow down and use simple vocabulary, and not criticize the child, to not put pressure on the child (e.g., don't demand that the child confess guilt), to wait two seconds after the child finishes speaking before answering the child, and to give the child lots of hugs.

Indirect therapy is ineffective. A literature review found

> little convincing evidence that parents of children who stutter differ from parents of children who do not stutter in the way they talk with their children. Similarly, there is little objective support that parents' speech behaviors contribute to children's stuttering or that modifying parents' speech behaviors facilitates children's fluency.[Nippold1995]

More than a dozen studies found no evidence that altering parental behavior changed children's speech. These studies found no differences for positive statements (praise, encouragement, agreement), negative statements (criticism, reprimands), questions, topic initiations and terminations[Meyers1985a]; conversational assertiveness and responsiveness[Weiss1992]; response time latency or the time between one person finishing speaking, and the other person beginning speaking[Kelly1992]; "formal" style vs. a "casual" style[Howell1997]; or illocution.[Rommel1997]

The studies I really liked found the opposite of what the "experts" have been telling parents for 75 years:

- A study found that mothers interrupt their child after dysfluencies, not before.[Meyers1985b] This suggests that *not* interrupting causes children to stutter!
- A study found that when mothers spoke faster their children spoke *slower.*[Meyers1985c] Another study trained parents to slow their speaking rates. The children's speaking rate *increased.*[Stephenson-Opsal1988] This suggests that parents talking *slowly* causes their children to stutter!
  Parents of children who stutter produced more positive statements (e.g., praise, encouragement) and fewer negative statements (e.g. criticisms, disparaging remarks) than parents of children who didn't stutter.[Meyers1990] This suggests that parents' praise and encouragement *causes* children to stutter!
- A multiyear study followed 93 preschool children. At the start, none of the children stuttered. One year later, 26 of the children stuttered. The researchers compared the speech behaviors of the two groups of mothers, before their children started stuttering. No differences were found, except that mothers of children who would stutter had shorter,

less complex utterances.[Kloth1995] This contradicts the "capacities and demands model" of childhood stuttering.

More generally, some psychologists now discount the role of parents in the development of children's character and personality. About 50% of the personality differences are attributable to our genes, and the rest due to the child's peers: "what parents do seems to be nearly irrelevant."[Harris1998]

14.2 Direct Therapy

In contrast, *direct therapy* changes the child's speech and behaviors. Direct therapy can be more of a big shove, rather than a gentle nudge. It may include:

Games to encourage speaking.Games to train specific speech skills, similar to adult fluency shaping therapy[1]. Modeling the child's speech and/or behaviors.

A child's first therapy session may just be playing a game to encourage the child to talk. E.g., the speech-language pathologist and child silently play with separate boxes of trucks, on opposite sides of the room. The speech-language pathologist begins making engine sounds. She then gradually moves to the center of the room, and her trucks interact with the child's trucks.

"Say the Magic Word" is another game to encourage talking. You can play this while looking through a picture book, or while driving. The parent says she sees something. The child guesses what the parent sees. When the child says the "magic word," the parent rings a bell or gives the child a peanut. No particular word is magic–the child is rewarded for fluent words.

A frequency-shifted auditory feedback[2] (FAF) device makes shy children want to talk. They're fascinated to hear their voices sounding like a "little kid" (frequency upshift) or a "monster" (frequency downshift).

Some games teach speech skills. In "Can't Catch Me," one person gets a peanut when the other person asks a question. You then quietly eat your peanut before answering the question. If you answer the question before eating your peanut, you must put your peanut back. The parent should lose more peanuts than the child, by answering too quickly. This reduces the time pressure the child feels about quickly answering questions.

A turtle hand puppet can teach slow speech with stretched vowels. When the child uses the target speech skills, the turtle slowly walks. When the child speaks fast, the turtle retreats into her shell.

Super Duper[3] has other games for stuttering therapy.

1 http://en.wikibooks.org/wiki/Speech-Language_Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FOpen-%20and%20Closed-Loop%20Speech%20Motor%20Control

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FAuditory%20Processing%2FAltered%20Auditory%20Feedback%23Frequency-Shifted%20Auditory%20Feedback

3 http://www.superduperinc.com

14.3 Modeling

- Caitlyn, a four-year-old female who began to stutter in the midst of her parents' divorce, was exhibiting significant struggle and tension behavior as well as secondary behaviors. Of most concern was her head-banging behavior during difficult moments of stuttering. After many sessions in which I attempted to eliminate this behavior through fluency-shaping principles, I saw no change. One day, shortly after Caitlyn banged her forehead on the table to interrupt a block, I modeled the same behavior. Caitlyn was shocked and ignored me. After I did this several times she asked me, "Why did you do that? Didn't that hurt?" I responded, "I don't know why I did it. But it sure didn't help me get my word out!" Caitlyn never again banged her head to help her talk. She has been out of therapy for six years and remains fluent.[Wallace1998]

This speech-language pathologist's *modeling* of Caitlyn's behavior was radically different from conventional stuttering therapy practices. The speech-language pathologist improved the child's awareness of her stuttering. In contrast, most "experts" would have pretended not to notice Caitlyn's head-banging behavior. They would have predicted that making Caitlyn aware of her head-banging would have caused emotional trauma and made her stuttering worse.

Imagine that a teenage brother and sister use profanity at the family dinner table. Should the parents act horrified and tell their children never to use such language? Should they refuse to allow dessert or television for the teenagers?

You know that won't work. The teenagers will use profanity at the next opportunity, just for the amusement of horrifying their parents. Instead, the parents should immediately use twice as much profanity. Dad should say, "#$%^, this is best *&^% meatloaf in the whole @#$% world!"

Mom should then respond, "Oh, you big !@#$, you're so &^%$ cool and #$%^ sexy and when you talk ^%$#!"

The teenagers will turn red with embarrassment, and never use profanity again in front of their parents!

In a psychology class about traumatized children we saw a video of a ten-year-old boy destroying a psychologist's office. The boy threw every object he could throw, and smashed everything else. The psychologist sat there calmly telling the boy not to destroy the office. He finally grabbed the boy and hugged him. To me it looked like a full body restraint but the instructor said it was a hug, and that was what the boy really needed. I asked what would have happened if the psychologist had modeled the boy's behavior. E.g., the psychologist could have thrown and smashed stuff. The instructor said that was the worst idea she'd ever heard. But I think the boy would have stopped, watched in amazement as the psychologist destroyed his own office, and then asked, "Why did you do that?" The boy and the psychologist could then have started talking, with understanding of what the boy was feeling, which is what I think the boy needed.--Thomas David Kehoe[4] 02:06, 28 March 2006 (UTC)

The purpose of modeling is to improve the subject's awareness of his or her behaviors. Stutterers are largely unaware of their stuttering, or at least what they do when they stutter.

4 http://en.wikibooks.org/wiki/User%3ATdkehoe

Everyone else can see the stuttering but the stutterer can't. Combining video and modeling can help a stutterer improve self-awareness[5].

Modeling also dispels a person's mistaken view that a behavior is invisible, or it's acceptable, or everyone does it. If everyone ignores undesirable behavior then the person may think it's OK.

Modeling only works when the modeler or the modelee knows how to replace the undesirable behavior with a target behavior. E.g., it's OK for your speech-language pathologist to model your stuttering because she can show you how to speak fluently. It was OK for my Romantic Disaster of 1996[6] to make me aware that I was stuttering, because I knew what to do to talk fluently. It's not OK to point out a problem to someone who has no idea what to do about it.

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5 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FPsychological%20Issues%2FSelf-Awareness%20of%20Stuttering%20Behaviors%23Self-Awareness%20of%20Stuttering%20Behaviors

6 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FAutomatic%2C%20Effortless%20Fluency%23My%20Romantic%20Disaster%20of%201996

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Category:Speech-Language Pathology[7]

7 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

15 Stuttering Therapies for School-Age Children

Ask your child whether he or she likes school. In first and second grade, girls see school as where they socialize with their friends, via quiet verbal communication and cooperation. In contrast, boys see school as where they're told *not* to play with their friends, via physical interaction such as running around or showing off their physical abilities. This difference makes school more stressful for boys, with effects on their speech.

15.1 Why Do More Boys Than Girls Stutter?

Among preschoolers, boys who stutter outnumber girls who stutter about two to one, or less.[Yairi2005a]

But more girls recover fluent speech, and more boys don't.[Yairi2005b] By fifth grade the ratio is about four boys who stutter to one girl who stutters. This ratio remains into adulthood.[Craig2002]

Why boys are more likely to stutter, and less likely to recover, isn't certain. Boys generally have more diseases and disorders, for reasons having to do with the Y chromosome. Boys generally have more speech disorders because girls are better at speech and language, and especially at using speech and language for social purposes. Speech and language are more stressful for boys, so boys prefer to interact physically.

At five for girls and seven for boys, children's brains go through a massive adrenaline shift. After this shift, the child is able to socialize with other children in groups. Before this age, playing with more than one or two friends can be a stressful experience.

This was apparent to me at my nephew's sixth birthday party. One of his presents was a slinky. I showed his friends how to make the slinky walk down stairs. Three girls sat together at the top of the stairs and took turns. One girl could easily make the slinky walk down the stairs. This was harder for the second girl, but she could do it. The third girl couldn't do it at all. But they cooperated and encouraged each other. Two boys wanted to try it. But they couldn't get to top of the stairs without wrestling each other and falling back down the stairs. I wouldn't allow wrestling on the stairs, so they'd run around the living room chasing each other. Then they'd come back to play with the slinky, but start wrestling on the stairs again.--Thomas David Kehoe[1] 02:10, 28 March 2006 (UTC)

At five, girls are ready to start school. Boys are wild animals until seven. School can be stressful for boys who aren't ready for school. The most stressful part of school for

1 `http://en.wikibooks.org/wiki/User%3ATdkehoe`

boys may be the communication demands. Girls are using communication to make friends. Girls' communication skills and social skills develop together. In contrast, boys may not be ready to socialize with 25 other children, in a building with hundreds of other children. Some children are in school and day care for twelve hours, without time to relax or to be alone–that'd stress me out!

If your five- or six-year-old son stutters, and you don't think he's ready for school (e.g., he vomits or wets his pants at school), consider keeping him home another year, or look into a co-op school where a parent can attend school with him, or let him attend school but don't put him in daycare for another six hours each day.

15.2 SLPs vs. Parents vs. Computers

A large study found that speech-language pathologists training parents to do speech therapy with their children was more effective than the speech-language pathologists doing therapy with the children. The study also found that computer-based stuttering therapy, with minimal involvement from speech-language pathologists, was the most effective treatment of all.

A study of 98 children, 9 to 14 years old, compared three types of stuttering therapy. The three types of therapy were:[Craig1996]

1. Intensive "smooth speech" fluency shaping trained relaxed, diaphragmatic breathing; a slow speaking rate with prolonged vowels; gentle onsets and offsets (loudness contour); soft articulation contacts; and pauses between phrases. The children did this therapy in a speech clinic for 35 hours over one week.
2. Home-based "smooth speech." This was similar to the first group, but parents were included, and encouraged to continue therapy at home. Therapy was done in a speech clinic for six hours once a week for four weeks (24 hours total).
3. Electromyographic biofeedback. The children used an EMG biofeedback computer system about six hours a day for one week (30 hours total). The EMG system monitored the child's speech-production muscle activity. The children were instructed to tense and then relax their speech-production muscles. The goal was to develop awareness and control of these muscles. The children then worked through a hierarchy from simple words to conversations, while keeping their speech-production muscles relaxed. After mastering this while watching the computer display, the children did the exercises with the computer monitoring but not displaying their muscle activity. The speech pathologists did relatively little with the children: "Constant clinician presence was not necessary as the computer provided feedback as to whether the child was performing the skills correctly."

A fourth (control) group didn't receive any stuttering therapy.

At the end of each therapy program, all three therapies reduced stuttering below 1% on average. The control group had no improvement in fluency.

One year after the therapy program, the percentage of children with disfluency rates under 2% were:

1. 48% of the children from the clinician-based program.

2. 63% of the children from the parent-based program.
3. 71% of the children from the computer-based program.

The results for children with disfluency rates under 1% were even more striking:

1. 10% of the children from the clinician-based program.
2. 37% of the children from the "parent-based" program.
3. 44% of the children from the computer-based program.

I.e., the computers were most effective, the parents next most effective, and the speech-language pathologists were least effective in the long term. At the 1% disfluency level, the computers and the parents were about *four times* more effective than the speech-language pathologists.

Four years later, all three groups had average stuttering reductions between 76% and 79%. This may have been due to the more dysfluent children receiving additional speech therapy.[Hancock1998]

15.3 Motivation for Speech Therapy

The father of a ten-year-old stutterer wanted to do everything to help his son. On the advice of his son's speech-language pathologist, the father bought a top-of-the-line electronic stuttering therapy device. The speech-language pathologist trained the father to use the device. The father worked with his son thirty minutes every evening.

After two months, the father returned the device for a refund. The son was 100% fluent when practicing with the device. The kid had no interest in using slow, relaxed speech the rest of the day. Stuttering didn't stop the boy from playing baseball or doing other things boys do. In the world of seven- to twelve-year-old boys, talking isn't an important activity.

But your seven- to twelve-year-old son's good self-esteem can be a double-edged sword. It's hard to get school-age boys motivated to do speech therapy. This makes it more important that parents do speech therapy with their child in every conversation. Ask your child's speech-language pathologist what your child should be doing (e.g., slow speech with stretched vowels). Have your child use therapy skills on every sentence he says to you. Be your child's therapy helper.

15.4 Advice for Parents, by Magdalene Lima, SLP

I am a speech-language pathologist in private practice and formerly a public school therapist for nine years. My suggestions to parents of children with speech problems are:

1. Do some research in these areas. Check out the communication disorders websites.
2. Go to your school speech-language pathologist with what you know and ask her what she thinks. The best approach is to treat her as the professional she is in a non-critical way with the attitude that you just want to understand all the treatments available for your son. Offer to help get information to her if she doesn't have it. Let her know you understand the position she is in and that you are on her team. This will get

you much further in getting the appropriate services for your child than fighting your school.

3. If your insurance covers it or you have the funds, find a good private pediatric speech and languageclinic in your area and AT LEAST have an evaluation done. Just that information alone could really help the school SLP. If you can afford private therapy, get it. The main difference in service is that your child will receive individual therapy with a clinician that has the time and resources needed to provide the highest quality therapy.

As a former school speech-language pathologist, my skills and knowledge didn't suddenly change when I switched over to private practice. The setting changed, and that makes a huge difference. I now serve 30 clients rather than 75, I see them all individually, and I am paid more than in the schools. In the hours I don't see clients, I am busy researching, giving parent support, writing regular and detailed reports, and planning innovative therapy rather than going to bus duty, lunch duty, hall duty, faculty meetings that don't really apply to me and filling out massive amounts of government-required paperwork.

15.4.1 Is The Problem Ability or Setting?

Now to those of you who think the worst of the public school speech-language pathologist: I'd like you to stand in her shoes for a minute. In the last three years of my public school experience my caseload became unmanageable. I had 75 students, including a severely and profoundly handicapped class, four autistic students and all other students in speech from grades K-5 at that school. I begged, cried and pleaded for help from my supervisors. I KNEW I could not provide the quality of service each and every one of these students and their families deserved. However, the answer was always: get creative, we don't have money in the budget. Please understand, in my situation, it was not a lack of caring, lack of skill or ability–there was absolutely nothing I could do. I became angry and frustrated at our administration. Why didn't they provide the training, time, personnel and support we needed to provide services to these students?

15.4.2 Speech Pathology: A Growing and Diverse Field

The disorders in our field and the therapies that have now been developed have become extremely specialized. In the schools I was expected by parents to be an expert in the following fields: stuttering, swallowing disorders, voice disorders, articulation disorders including tongue thrust, cleft palate, phonological process disorders as well as motor speech disorders, autism and PDD, traumatic brain injury, ADHD, language and learning disabilities, hearing impairments and social and pragmatic communication disorders. Excuse me, do you realize that just as physicians receive a basic foundation in medicine, so do speech-language pathologists receive a basic foundation in all of the above disorders. You graduate from college and through your experience and personal growth and research, you become an expert in a few areas. It would be virtually impossible for one person to have the time and energy it would take to become an expert in all those areas!

This is why our field is moving towards specialty certifications. What will public schools do then? I guess they will have to hire the specialists that their individual students require.

15.4.3 Many and Varied Problems in the Schools

More and more our district began hiring speech assistants (speech practitioners who are not required to meet the standards of education, clinical practicum and experience needed to be fully certified and licensed) to handle huge caseloads with minimal supervision from licensed speech-language pathologists. There is a shortage of qualified speech language pathologists willing to go into public school therapy when there are much more lucrative and attractive positions available in other settings. As I talked with administrators, I soon became aware of the pressure being applied to them from the state, parents and other agencies to meet all these educational requirements. For every parent who complains there is not enough money to provide quality special education services in the school, there is another parent complaining that their gifted and talented child is not being given the education THEY deserve because of all the money being poured into special education programs. Or what about the parents of children in sports programs, they have THEIR list of complaints. Everyone thinks that their cause is totally justified because they are arguing for their children, and nothing can convince anyone that their child doesn't deserve the best.

I left the public school system to go into private practice and now my problem is solved–I love my work and I'm giving quality services to clients with fantastic results! However, what's your solution? My final and personal resolution to this whole issue, is that in many cases–not all, but many–I truly feel that schools are doing the very best they can with the resources available to them to provide the services that our children need. However, sometimes, parents are right, it's not enough. So what are we going to do? Is every parent in America with a complaint going to file suit against the local school district? If this happens, our schools will begin focusing on preventing lawsuits rather than on how best to serve and educate our children.

15.4.4 Work With Your Administration/Educators

Sometimes all it takes is going to an administrator, such as the Director of Special Education, and pleading your case. Also give your specific suggestions at your child's IEP meeting. You'd better have some research and documentation to back up the necessity of your suggestions. The attitude and manner in which you present yourself is of utmost importance, if they perceive you are willing to make compromises and work with them they will be more willing to stick their neck out for you. Suggest specific things such as the district paying for an outside assessment, or hiring a consultant temporarily who can lend their expertise to your child's case. Get over any intimidation you feel in asserting yourself with these people, they are just people with children and jobs and stresses just like you. What they say to you is never written in stone.

15.4.5 Conclusion

I'm not saying you shouldn't fight extreme injustice or abuse. I'm saying it's a huge system with a lot of variables involved. The fight is societal and governmental–usually not your local educational facility. Become involved politically in your state with your speech and hearing association–they always have a branch that is lobbying for legislation to improve speech services in the schools. Meanwhile, you have a child that has needs for quality services in

the area of speech pathology, do the best you can to get that service, whether it be private therapy through insurance or private pay, or school therapy, don't stop looking until you find what you need.

YOU take responsibility to research, learn things for yourself and communicate with those who affect your child's education.

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Category:Speech-Language Pathology[2]

2 `http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology`

16 Stuttering Therapies for Teenagers

> I am a mother of a stuttering thirteen-year-old boy. Stuttering really had never bothered him until this year. It is very frustrating for him to talk on the phone. His friends call all the time but he has refrained from talking on the phone because his stuttering seems to get worse. My husband and I have noticed him withdrawing from his peers. We have always had an active role with his stuttering. He has been to a lot of speech-language pathologists and we have also tried the CAFET [biofeedback computer] system. This was helping him. Unfortunately the closest center was more than two hours away. After one year it was too stressful on him missing too much school. Because of this we had to stop. Since then he has wanted nothing to do with speech-language pathologists.

Parents of teenagers who stutter tell similar stories:

- The teenager has been seeing his school's speech-language pathologists for five or even ten years. His speech isn't improving. He wants to discontinue speech therapy.
- He's fluent in the speech-language pathologist's office, but stutters everywhere else.
- The parents have taken him to other speech clinics, without success.
- He used to have good speech attitudes, saying whatever he wanted. Now he fears and avoids certain words or speaking situations.
- His social behavior has changed. He's withdrawing from social contacts.

Previously he saw himself as being like most other kids, doing the same things as other kids. School-age boys' social activities, e.g., baseball, don't demand much talking. Now he thinks of himself as a stutterer, different from other teenagers. Teenagers' social activities, e.g., dating or getting an after-school job, are harder for a stutterer.

Your teenager is an adult, in terms of stuttering. He should be doing adult stuttering therapy. This can include:

- Psychological stuttering therapy, training fluent speech (physical) skills.
- A support group for teenagers who stutter.
- An intensive speech therapy program or a summer camp for teenagers who stutter. (Google "speech camp for teens who stutter."[1])

16.1 Develop a Passion

In the chapter Famous People Who Stutter[2], you'll learn that many celebrities developed their talents during high school as a result of stuttering. E.g.,

1 http://www.google.com/search?client=safari&rls=en&q=speech+camp+for+teens+who+stutter&ie=UTF-8&oe=UTF-8

2 Chapter 30.0.1 on page 125

- James Earl Jones, Bruce Willis, and Nicholas Brendan overcame stuttering through acting.
- Carly Simon developed her skills as a singer and a songwriter because she couldn't talk about her feelings.

When a teenager feels passion for an activity, he or she can focus with greater intensity than adults. Your job, as a parent, is to help your teenager focus on a speech-positive activity, instead of focusing on video games or memorizing Black Sabbath lyrics.

Help your teenager become passionately involved in activities that require talking, improve his fluency, and develop his social skills. Such activities include:

- Singing.
- Acting.

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• Sports.
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- Debating.
- Foreign languages.
- Organizing a teenage stuttering support group.
- A science project[3] about stuttering.

16.2 Involve Peers in Speech Therapy

Are your teenage clients less than enthusiastic about speech therapy? Well, duh, if you're a speech-language pathologist then you're at least 25! You might even be over 30! Why would a teenage want to talk to someone your age?

Instead, have a teenage stutterer bring a friend to speech therapy. He'll talk to his friend about skateboarding or video games or other stuff you're clueless about. Better yet, you can train the friend to give your client a subtle reminder[4] when he needs to slow down or get back on-target.

Or role-play the teenager asking a peer out on a date. He can ask her for her telephone number by saying that his speech therapist wants him to practice making telephone calls. I used to do something like this: I met a girlfriend by telling her that my speech therapist wanted me to introduce myself to strangers.

Paramount in teenagers' minds is connecting to peers (other teenagers), e.g., being seen as "cool" by their classmates. Use speech therapy as way to connect to peers and your teenager will want to do speech therapy. E.g., instead of (thinking of himself as) being seen as a boy who stutters, help your teenager think of himself as a boy who's not afraid to ask girls for their telephone numbers and ask them out on dates.

3 Chapter 37 on page 141

4 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FAutomatic%2C%20Effortless%20Fluency%23My%20Romantic%20Disaster%20of%201996

16.3 Learn American Sign Language

I took four years of German in high school and college. The classes were taught in a conversational style. Being unable to talk, I learned nothing. No one suggested that I study American Sign Language instead. I could have been 100% fluent in that! Being good at something would have improved my self-esteem. In contrast, I felt like the stupidest person in the German classes. And if I learned sign language I would've made friends in the deaf community, or maybe worked part-time as a sign language interpreter.--Thomas David Kehoe[5] 02:12, 28 March 2006 (UTC)

Category:Speech-Language Pathology[6]

5 http://en.wikibooks.org/wiki/User%3ATdkehoe
6 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

17 Stuttering Therapies for Mentally Retarded Individuals

Oliver Bloodstein wrote in his book *A Handbook on Stuttering* of "ample evidence" that stuttering is especially prevalent among persons with mental disabilities. Stuttering seems to be especially common among persons with Down Syndrome. There is some debate about this, as the stuttering symptoms among the developmentally-delayed can be different from stuttering in adults of normal intelligence.

Developmentally-delayed individuals tend to have other speech and language problems as well. A speech pathologist treating a mentally-retarded person will probably use more than just stuttering therapies. There are books devoted to this, such as Communication Strategies for People with Developmental Disabilities: Issues for Theory and Practice, edited by Ken Linfoot, Ph.D. (1995, Baltimore: Brookes Publishing Company, $33, 800/638-3775).

Eugene Cooper suggests that "reducing the number of abstract concepts the clinician uses" is paramount in treating mentally-retarded stutterers. He also emphasizes that therapy should focus on helping mentally-retarded stutterers "identify and express their feelings and attitudes about the problem." Too often, speech pathologists act as if mentally-retarded persons lack feelings and emotions, as well as intelligence. Cooper also writes that the stutterer should be "capable of verbalizing the goal of the procedure and their desire to achieve that goal" (Cooper, 1986)- good advice with any stutterer.

If the person likes to play video games, you may want to try some of the speech therapy computer games.

Category:Speech-Language Pathology[1]

1 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

18 Fluency Shaping Stuttering Therapy

Fluency shaping therapy trains stutterers to speak fluently with relaxed breathing, vocal folds, and articulation (lips, jaw, and tongue).

This chapter is divided into sections:

- Motor Learning and Control[1]
- Fluency Shaping Overview[2]
- Fluency Shaping Techniques[3]
- Fluency Shaping Programs[4]
- Computers and Electronics for Fluency Shaping[5]
- Efficacy Studies[6]
- Beyond Fluency Shaping[7]
- Zen in the Art of Stuttering[8]
- Fluency Shaping Critiques[9]–This section is for criticisms of fluency shaping therapies.
- Personal Experiences with Fluency Shaping Therapy[10]–Add your experiences here.

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Therapy%2FMotor%20Learning%20and%20Control

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Therapy%2FFluency-Shaping%20Protocols

3 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Therapy%2FFluency-Shaping%20Techniques

4 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Therapy%2FFluency-Shaping%20Programs

5 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FComputers%20and%20Electronics%20for%20Fluency-Shaping

6 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Efficacy%20Studies

7 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FBeyond%20Fluency-Shaping

8 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FZen%20in%20the%20Art%20of%20Stuttering

9 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Critiques

10 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FPersonal%20Experiences%20with%20Fluency-Shaping%20Therapy

18.1 History of Fluency Shaping Therapy

William Perkins and Richard Curlee developed the first fluency shaping programs. Einer Boberg (ISTAR), Bruce Ryan (Monterey Fluency Program), George Shames and Cheri Florence (Stutter-Free Speech), and Ronald Webster (Hollins) have developed other programs.

18.2 External Links:

- ISTAR[11]
- Hollins[12]

Category:Speech-Language Pathology[13]

11 http://www.istar.ualberta.ca/
12 http://www.stuttering.org/
13 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

19 Stuttering Modification Therapy

Stuttering modification therapy is primarily associated with Charles Van Riper.

The goal of stuttering modification therapy is not to eliminate stuttering. Instead, the goals are:

- Modify your moments of stuttering, so that your stuttering is less severe.
- Reduce your fear of stuttering, and eliminate avoidance behaviors associated with this fear.

19.1 Four Phases of Stuttering Modification Therapy

The therapy has four phases: identification, desensitization, modification, and stabilization.

19.1.1 Identification

You begin by identifying the core behaviors, secondary behaviors, and feelings and attitudes that characterize your stuttering.

Your speech-language pathologist points out your "easy or effortless stuttering." You learn to identify when you do these behaviors. The goal is to improve your awareness of what you do when you stutter.

Next, your speech pathologist trains you to identify and become aware of your avoidance behaviors, postponement behaviors, starting behaviors, word and sound fears, situation fears, core stuttering behaviors, and escape behaviors.

Finally, you identify feelings of frustration, shame, and hostility associated with your speech.

At first, identifying these behaviors is done in the speech clinic. Later, your speech pathologist takes you out of the clinic, to identify what you do in everyday conversations.

19.1.2 Desensitization

Van Riper called this "toughening the stutterer to his stuttering." You do this in three stages:

1. Confrontation, or accepting that you stutter. You're expected to tell people that you stutter, and talk about what you are doing in therapy to change your stuttering.
2. Freeze your core behaviors–repetitions, prolongations, and blocks. When you stutter, your speech pathologist raises a finger. You hold what you are doing, until she drops her finger. For example, if you were repeating a syllable, you have to continue to repeat that syllable. Your speech pathologist will make you freeze these core behaviors

for longer and longer periods. The goal is for you to become less emotional or more tolerant of these behaviors.
3. Voluntary stuttering, or stuttering on purpose. This helps you remain calm when you stutter.

19.1.3 Modification

This is where you learn "easy stuttering" or "fluent stuttering," in 3 stages:

1. Cancellations. When you stutter, you stop, pause for a few moments, and say the word again. You say the word slowly, with reduced articulatory pressure, and blending the sounds together.
2. Pull-outs. After you master freezing and cancellations, you use your "easy stuttering" while you are in a stutter, to pull yourself out of the stutter and say the word fluently.
3. Preparatory sets. After mastering pull-outs, you look ahead for words you're going to stutter on, and you use "easy stuttering" on those words.

19.1.4 Stabilization

The last stage of stuttering modification therapy seeks to stabilize or solidify your speech gains. This is accomplished through sub-goals:

The first is for you to become your own speech therapist. You take responsibility for making your own assignments and prescribed therapy activities.

Another sub-goal is "the automatization of preparatory sets and pull-outs."

The last subgoal is for you to change your self-concept from being a person who stutters to being a person who speaks fluently most of the time but who occasionally stutters mildly.

19.2 Efficacy Studies

A study indicated that naïve or nonprofessional listeners responded less well to stuttering combined with stuttering modification techniques than they did to stuttering (only).[Manning1999] In other words, listeners may prefer to listen to untreated stuttering than to listen to a stutterer using stuttering modification therapy techniques.

Nineteen adult stutterers participated in the 3.5-week Successful Stuttering Management Program[1] (SSMP, developed by Dorvan Breitenfeldt) program. Immediately post-treatment their speech had improved 10%. Six months later this modest gain had all but disappeared. Several measures of anxiety found a 10-15% psychological improvement. The researchers cautioned that six months isn't a long follow-up, and that this psychological improvement might not last, given the absence of improved speech. The researchers concluded, "the SSMP appears to be ineffective in producing durable improvements in stuttering behaviors."[Blomgren2005]

1 http://www.ssmpmanual.com/

19.3 Stuttering Modification Programs

19.3.1 Approach-Avoidance Therapy (Joseph Sheehan)

In the 1940s, behavioral psychologist Neal Miller tied strings to rats, and sent them scampering down a runway towards food. He measured how hard the rats pulled on the strings to get to the food. He called this force the "gradient of force."

He then put an electric shock at the end of the runway, instead of food. The rats scampered away from the electric shock, and Miller called this the "gradient of avoidance."

He put the food and the electric shock together at the end of the runway. The rats wanted to scamper to the food, but away from the electric shock. They ended up running back and forth in a narrow space somewhere in the middle of the runway. This was called the "approach-avoidance conflict."

This reminded psychologist Joseph Sheehan of stutterers' repetitions and prolongations. In 1953, Sheehan developed the theory that stutterers want to say a word, but also want to avoid the word.

Why would stutterers wish to avoid saying words? Sheehan suggested that stutterers dislike the listener, or fear certain words, or fear certain situations, or feel guilt or anxiety about the emotional content of our message.

Sheehan believed that "stuttering is not a speech disorder, but a conflict revolving around self and role, an identity problem." He based this view on the fact that most stutterers have difficulty saying their names, and that many stutterers are fluent when acting (Sheehan, 1970).

Sheehan developed a stuttering modification therapy program based the reduction of avoidance.first, in the "self-acceptance" phase, you are trained to accept yourself as a stutterer. You are encouraged to maintain eye contact with listeners, and discuss your stuttering with friends and acquaintances.

In the "monitoring" phase, you improve your awareness of what you do when you stutter.

In the "initiation" phase, you seek out feared situations, and feared words, and stutter openly.

In the "modification" phase, you stutter openly and easily. You let the listener know that you are having trouble with a word. You do a prolongation on thefirst sound of the word. You do a "smooth release" onto the next sound.

Lastly, in the "safety margin" phase, you develop a tolerance for disfluency.

Sheehan did not believe that stutterers could or should speak fluently. In his therapy, "No practicing of special techniques for achieving fluency are involved–only openness and honesty and a changing role of self-acceptance as a stutterer will lead to overcoming the tyranny of stuttering."[CulattaGoldberg1995]

Sheehan's stuttering therapy is practiced at the University of California–Los Angeles (UCLA).

19.3.2 Successful Stuttering Management Program (Breitenfeldt and Lorenz)

The "Successful Stuttering Management Program" (SSMP) is practiced by Dorvan Breitenfeldt and Dolores Rustad Lorenz at Eastern Washington University in Spokane, Washington. It's a three-week, intensive, residential group therapy program. The program is mainly stuttering modification therapy, emphasizing avoidance reduction.

The program begins with "confrontation of stuttering." The aim is to develop awareness of your stuttering, reduce use of avoidance techniques, and eliminate word and situation fears. The techniques are voluntary stuttering and stuttering surveys.

In a "stuttering survey," you go to a shopping mall, stop strangers, and ask them questions about their reactions to your stuttering. You stutter on purpose. You do 200-300 stuttering surveys in the program.

In the second phase, you learn the stuttering modification techniques: preparatory sets, cancellations, and pull-outs. This differs from other stuttering modification therapies, in which preparatory sets are learned after cancellations and pull-outs.

The second phase also includes changing your self-concept and lifestyle.

You also substitute continuents for plosives. You substitute /w/ for /b/, /s/ for /t/, and /z/ for /d/. For example, you say "wank" instead of "bank," and "zollar" instead of "dollar." You also add sounds with prolongations. For example, "water" becomes "oowater."

Other speech pathologists are skeptical of this technique:[DeNil1996]

> This type of substitution behavior seems to go against the original philosophy of non-avoidance the idea of teaching stutterers to substitute strikes us as [an avoidance "trick"] it may even strengthen clients' tendencies to scan ahead in anticipation of sounds that are feared and should be avoided.

In the third phase, you transfer your new skills to face-to-face and telephone conversations. You are also encouraged to do voluntary stuttering.

19.3.3 "Self-Therapy for the Stutterer" (Malcolm Fraser)

The book "Self-Therapy For The Stutterer," by Malcolm Fraser, shows how to do stuttering modification can be done as self-therapy, as opposed to going to a speech clinic. The book is published by the Stuttering Foundation of America.

19.4 Critiques of Stuttering Modification Therapy

19.4.1 Assumptions

Stuttering modification therapy assumes that stutterers will never be able to talk fluently, and so the best a stutterer can hope for is to be a better communicator while still stuttering. The effectiveness of other, more recently developed stuttering therapies for producing fluent speech makes this assumption questionable.

19.4.2 Identification Critiques

Improving self-awareness of stuttering behaviors, as well as psychological effects, is an excellent foundation for any speech therapy. The problem with this stage of stuttering modification therapy is that it was developed before the invention of video camcorders and biofeedback devices[2]. Current technology can help you do this stage better and faster.

19.4.3 Desensitization Critiques

Telling people that you stutter is good. But freezing core behaviors and voluntary stuttering could strengthen the neural pathways for these behaviors, making these undesirable motor programs even harder to change.

19.4.4 Modification Critiques

"Cancellations" and "pull-outs" don't work if you have poor awareness of your stuttering. By the time you realize that you are stuttering your speech may be out of control. If stutterers' auditory processing underactivity[3] results in poor awareness of one's speech, then stutterers who have a this neurological abnormality strongly can't be expected to modify their speech.

"Preparatory sets" teach stutterers to "scan ahead" for feared words, i.e., teach you another secondary behavior. In fact, the entire "modification" stage is arguably teaching you more secondary behaviors.

If modified stuttering sounds worse to listeners than untreated stuttering, increased listener discomfort may cause stress in the stutterer using stuttering modification techniques.

19.4.5 Stabilization Critiques

But "becoming your own speech pathologist" doesn't mean reading books about stuttering, taking a class, going to conventions, or learning about new research and therapies. "Becoming your own speech pathologist" means motivating yourself to do therapy activities indefinitely. You wouldn't do these therapy activities on your own, because you don't perceive resulting benefits. You need a speech pathologist to get you to do the activities.

Another goal is "the automatization of preparatory sets and pull-outs." But you're just told you to practice, and not taught techniques or practice schedules to maximize autonomous motor learning[4].

The last goal is for you to change your self-concept from being a person who stutters to being a person who speaks fluently most of the time but who occasionally stutters mildly. This would be a good goal if stuttering modification therapy trained you to be a person

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FComputers%20and%20Electronics%20for%20Fluency-Shaping

3 Chapter 4.2 on page 14

4 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Therapy%2FMotor%20Learning%20and%20Control%23Three%20Stages%20of%20Motor%20Learning

who stutters mildly. But if stuttering modification therapy "appears to be ineffective in producing durable improvements in stuttering behaviors." then this self-concept may be difficult to maintain.

19.5 Personal Experiences with Stuttering Modification Therapy

Please read Speech-Language Pathology/Stuttering/How to Participate in this Wikibook[5] before adding material.

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Category:Speech-Language Pathology[6]

5 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FHow%20to%20Participate%20in%20this%20Wikibook

6 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

20 Treating Speech-Related Fears and Anxieties

Introducing yourself to an attractive person. Raising your hand to answer a teacher's question. Ordering in a restaurant. Calling a store to ask if they have what you want. Making a toast at your best friend's wedding reception. Calling to order a pizza. Leaving a voicemail.

Do any of these make you nervous? Any that you never, ever do? Everyone is nervous about some speaking situations. Public speaking is humanity's most common fear, greater than the fear of death. Few women will introduce themselves to a man to ask for a date, or call a man who's given his telephone number and asked for a date. Ordering in a French restaurant is scarier than ordering at McDonald's.

20.1 The Predator Approach

Rent the video Predator[1], starring Arnold Schwarzenegger and Jesse Ventura. Settle down with a bowl of popcorn to watch the governor of California and the governor of Minnesota discuss school funding and property tax reform. Just joking. Back in 1987, Schwarzenegger and Ventura were action movie heroes. In *Predator* the men shoot a variety of large weapons, including an M-134 7.62mm minigun and an M-79 grenade launcher.

Now write down a list of speaking tasks that you don't do, that non-stutterers don't think twice about doing. Let's say that you're afraid to leave voicemails on answering machines. Write down all the speech therapy tools you can use in this situation. Imagine yourself as Schwarzenegger and Ventura making a list of weapons to bring. But instead of arming yourself with a minigun and a grenade launcher, your weapons for voicemail could include:

- Practicing your message before you call.
- Fluency skills, such as slow speech with stretched vowels, relaxing your breathing, or relaxing your vocal folds.
- Using a DAF/FAF anti-stuttering device.
- A hierarchy of stress, beginning with calling your own answering machine, then calling your speech-language pathologist's answering machine, then calling a friend's answering machine, then calling a business's answering machine (e.g., calling restaurants before they open asking if they have banquet facilities), and finally calling that attractive person of the opposite sex.

1 `http://www.imdb.com/title/tt0093773/`

Don't stop listing your arsenal until you look at the list and laugh at how you'll blow away that poor little voicemail. Then think of one more weapon to add to your list. You're ready when you're confident that you won't stutter.

Let's say that your message is, "You're the most wonderful person I've ever met. I can't wait to see you again." Using all of your fluency weapons, pick up the phone and call your own answering machine. Check your messages. Pretty good, huh?

Now call yourself again. This time, reduce or throw away one of your weapons. If you used one-second stretched syllables on the first call, call yourself using half-second stretch. Then go to quarter-second "slow normal" speech.

If you used an anti-stuttering device on the first call, don't use the device for your next call.

If you practiced the message on the first call, say something spontaneous on your next call.

Step by step, throw away your weapons, until you can call your own voicemail fluently, without effort or fear.

OK, if you're a non-violent person, think of this as a multifactoral approach to stuttering therapy. Instead of relying on one fluency skill, take one item from the auditory processing[2] category, e.g., an anti-stuttering device; one item from the speech motor control[3] category, e.g., relaxed vocal folds; one item from the stress control category, e.g., using a hierarchy of stress; one item from the neurotransmitters[4] category, e.g., medication, etc. Don't select all your fluency skills from one category, e.g., gentle onsets, diaphragmatic breathing, relaxed vocal folds, etc.

20.2 Make a Stress Hierarchy

Now take a step up the stress hierarchy. Call your speech-language pathologist and leave a message. (If you're not in speech therapy, call a friend or relative.) Begin with your full arsenal of fluency weapons, then call back, using fewer fluency weapons. Then work your way up your stress hierarchy. If you feel any twinge of fear on a call, take a step back until you feel confident again.

Approaching feared speaking situations can be like fighting a grizzly bear armed only with a pocket knife. Scary speaking situations combine to look like a ten-foot-tall bear. Most speech therapy programs give you only one weapon.

Divide your general fear of speaking into specific fears. The giant bear becomes many small bears. Now create a stress hierarchy, with a small bear on one end, and a bunny rabbit on the other end. And instead of having one weapon, which your speech-language pathologist (or the expert who trained her back at the university) assured you was the One True treatment for stuttering, you now have a variety of fluency skills.

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FAuditory%20Processing

3 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control

4 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FGenes%20and%20Neurotransmitters

You're armed like Arnold Schwarzenegger, you're hunting bunny rabbits, and you're in a pet shop before Easter. Armed to the teeth with speech therapy skills, there's no possibility of stuttering in your feared situation. Heck, it isn't even a feared situation anymore!

You now see why this chapter follows the auditory processing[5] chapter and the speech motor learning and control[6] chapter. The previous chapters gave you many weapons for your fluency arsenal. Now that you have many fluency skills you have no reason to fear speaking situations. Work your way down your list of feared speaking situations until you have no more speech-related fears and anxieties than an average non-stutterer.

20.3 Further Reducing Fears and Anxieties

When you run out speech-related fears and anxieties that non-stutterers aren't scared of, make a list of speaking situations that scare non-stutterers. Remember when I said that your speech can be better than non-stutterers? When you're ready, move on to these areas:

- Walk up to strangers at parties. If you're single, pick attractive persons of the opposite sex. Say that your speech therapist wants you to talk to strangers and ask if you can talk to this person. If you have an anti-stuttering device, ask if it's OK to use it. No one is going to say no. I met one of my ex-girlfriends this way.
- Join Toastmasters International to learn public speaking skills.
- Sign up for a beginning acting class at a university or community theater. Acting classes are the most fun you've had since sixth grade.
- Put together some funny stories and sign up to do stand-up comedy on amateur night at a nightclub.
- Sign up for voice lessons. Amaze people by singing at social occasions.
- Learn a foreign language. Talk to cab drivers in their native language.

20.4 Stress Is the Absence of Choices

We experience stress when our plans are thwarted. We try to reach a goal, and some little thing stops us. For stutterers, that little thing often is an inability to communicate.

E.g., you go to a fast-food restaurant to buy a cheeseburger. You can see the cheeseburgers behind the counter. You can smell the cheeseburgers. You even have correct change in your hand. All you have to do is say, "Cheeseburger"–but stuttering stops you.

Instead of thinking of stress as thwarted plans, think about your choices. You could point at the cheeseburgers. You could write "cheeseburger" on a note. You always have choices.

If you focus only on reaching your goal, you miss opportunities that may be better than your goal. E.g., you miss the salmon pesto salad the restaurant just added to the menu.

5 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FAuditory%20Processing

6 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control

Or you pantomime "cheeseburger" as if you were playing charades. You feel ridiculous, and people in the line laugh at you. Then a movie producer offers you a million dollars to star in his new "stupid and stupider" movie.

OK, that's unlikely. Just realize that you always have choices. As you imagine your choices, you'll feel your stress going away. Your insurmountable problem now looks like a variety of choices (see the section Personal Construct Therapy[7].

20.5 Use a Partner to Center Your Emotions

When you feel stressed, find a partner who expresses the opposite emotion.

E.g., if you're fired from your job. You come home feeling like a failure and you'll never succeed. You don't want a partner who agrees with you.

Instead, you want a partner who'll tell you that you're smart and hardworking, and you'll soon find a better job.

Picture your emotions like a car with a manual transmission. To shift from one gear to another gear, you have to shift through neutral gear. Similarly, to shift from feeling stressed to another emotion, first seek your emotional center.

20.6 Reduce Your Child's Stress

No studies have tested whether reducing stress affects children's stuttering. But you can try and observe whether this helps your child's speech.

Don't demand that your child confess guilt (fear of punishment). When your child experiences overwhelming emotions, e.g., is afraid to do something, don't demand that your child explain why he or she feels overwhelmed. Emotions are in a deeper, older brain area. Language is a higher, new brain function. An emotionally overwhelmed child may be unable to speak.

Don't insist that your child talk in an unfamiliar situation, e.g., at a new day care center (uncertain what to say, fear of embarrassment, uncertainty of status with new children). Situations that feel comfortable to you may be stressful to your child. Try to see stress from your child's point of view.

20.7 Reduce Your Listener's Stress

Stuttering is a rare disorder. Many people have never met a stutterer. I've had listeners ask if I was having a medical emergency, or ask if I was cold (apparently I looked like I was shivering). I have no doubt that other listeners thought that I was mentally retarded or psychotic, perhaps dangerous. Reduce their fears by saying that you stutter.

7 Chapter 21 on page 85

Some listeners think that they did something to make you stutter. Other listeners wish there were something they could do to help you. Tell them that you stutter. If they have any questions about stuttering, they'll ask you.

Make a joke about stuttering[8]. Or you could put stuttering on your business card, perhaps describing you as chapter leader of your local stuttering support group.

Better, tell listeners that you're using speech therapy skills. Ask if your fluency skills sound weird, then do what your speech-language pathologist wants you to do (e.g., breathe with your diaphragm, relax your vocal folds, slow down your speaking rate). Ask if your stuttering therapy speech sounds better than your stuttering.

Ask the listener to remind you when you miss a speech motor control target. You could ask listeners to remind you when you stutter, but they'll be uncomfortable doing this, and you'll feel embarrassed if you don't have good control over your stuttering. Instead, ask listeners to remind you when you miss targets, e.g., you talk too fast. You should have better control over that.

If you're doing speech therapy, tell listeners you'll pay $1 for each missed target they point out (see my Romantic Disaster of 1996[9]).

Lastly, if you use an anti-stuttering device[10], show it to your listener and ask if she minds if you use it. This is perhaps the best way to tell listeners that you stutter. Listeners invariably ask questions about the devices. In contrast, listeners rarely ask questions about speech therapy, e.g., vocal fold relaxation isn't of great interest to the general population. But everyone wants to know how anti-stuttering devices work. Suggest that the listener try on the device, and adjust it to make the listener stutter (by maximizing the delay, or moving the pitch shift up and down). When I do this, other people come over to see what's making their friend trip over his or her words. They give me positive feedback about my stuttering, laugh at their own failure to talk, and experience for a few minutes what it feels like to stutter.

20.8 Alternative Ways to Reduce Stress

If stuttering is the only way you know to reduce stress, you'll always stutter in stressful situations. Instead, learn alternative ways to reduce stress. Take a stress reduction class. Read books about handling stress.

One of the best ways to reduce stress is to relax your breathing. Stress reduction classes teach this. Or take a meditation or yoga class. Relaxed breathing not only reduces stress, it helps stutterers talk fluently.

8 Chapter 23 on page 97

9 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FAutomatic%2C%20Effortless%20Fluency%23My%20Romantic%20Disaster%20of%201996

10 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FAuditory%20Processing%2FAltered%20Auditory%20Feedback%23Altered%20Auditory%20Feedback

20.9 Look for Stuttering-Reducers

Imagine a stutterer reading a projected PowerPoint presentation aloud to an audience. He scans the slides for feared words. Sure enough, there's a p-word. And an s-word! He scans the prodigious thesaurus in his brain, looking for words he can substitute. But the audience is reading the slides projected on the screen. Will they think he's illiterate if he substitutes or skips words? But what if he blocks and the audience discovers that he stutters! What can he do?

He's looking for stuttering-increasers. I.e., he's looking for ways to stutter. And, sure enough, stuttering-increasers–difficult sounds, feared words, judgmental listeners–abound, if you know where to find them.

Imagine another stutterer, also reading aloud to an audience. Instead of looking for stuttering-increasers, she looks for stuttering-reducers:

- With her text prepared for her, she can focus on using her speech therapy skills instead of thinking about what she's saying.
- She can pretend to be a robot reading machine. The robot has no emotions, it just sees words, moves its mouth, and words come out.
- She can wear an anti-stuttering device and the audience will think it's a microphone for the PA system.
- When she introduces herself she can say that she stutters. Audiences love presentations that start with a joke, so she could start with a joke about her stuttering.

You'll recognize this as a variation of the *Predator* approach[11].

20.10 Increasing or Decreasing Stress in Therapy

Stuttering therapy typically begins with a stutterer learning closed-loop speech motor control in a low-stress environment, e.g., chatting with the speech-language pathologist, or alone practicing word lists.

The stutterer gradually moves from closed-loop speech motor control to open-loop speech motor control. When he achieves fluent open-loop speech motor control, the speech-language pathologist takes him to a shopping mall for "transfer" practice. Then they're finished with speech therapy and he's on his own.

The result is fluent open-loop speech in low-stress environments, and relapse to open-loop stuttering in high-stress environments. The relapse shake the stutterer's self-confidence. Or the stress de-myelinates (weakens) fluent speech motor programs. A single high-stress, dysfluent experience might destroy weeks of low-stress practice.

Or both. The stutterer then gets into a vicious cycle of stress and relapse leading to more stress and more relapse.

11 Chapter 21 on page 85

A better plan would be to train a stutterer to recognize stressful situations, and consciously switch to closed-loop speech motor control (i.e., very slow speech[12]) in high-stress environments. When he feels his stress diminishing he can switch to open-loop speech motor control (i.e., normal-sounding speech).

For example, I used to meet strangers and say, "My speech-language pathologist wants me to talk to strangers. May I talk to you?" I would then use very slow closed-loop speech motor control. After we had a friendly conversation going and my fears and anxieties diminished, I'd use the "slow-normal" speaking rate that mixes open- and closed-loop speech motor control.

In other words, with traditional therapy the stutterer switches between stuttering and fluent speech, as situations change between high-stress and low-stress. Instead, I switched between closed-loop and open-loop speech motor control, as stress changed. The result was that I constantly myelinated (strengthened) the fluent speech motor programs in my brain. Most important, I strengthened my brain's connection between stressful situations and closed-loop speech motor control. Switching to closed-loop speech motor control in a stressful situation should be as habitual as remembering to count to ten before punching someone.

You might object that severe stutterers may be unable to produce even two-second stretch closed-loop speech motor control in stressful situations. I.e., their fluent speech completely breaks down under stress. So use the *Predator* approach[13].

Or you might object that closed-loop speech motor control sounds "weird," and stressful situations are where you most want to sound normal. When I said to strangers, "My speech-language pathologist wants me to talk to strangers#133;" no one ever refused. Most people then asked me questions about stuttering therapy. As long as the stutterer tells listeners that he is using special "speech therapy speech," sounding "weird" isn't an issue.

20.10.1 References

1. [Nippold1995]Nippold, M., Rudzinski, M. "Parents' Speech and Children's Stuttering: A Critique of the Literature," *Journal of Speech and Hearing Research*, 38:5, October 1995.

- Next section: Personal Construct Therapy: You Always Have Choices[14]
- Back to Table of Contents[15]

Category:Speech-Language Pathology[16]

12 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FOpen-%20and%20Closed-Loop%20Speech%20Motor%20Control%23Slow%20Speech
13 Chapter 21 on page 85
14 Chapter 21 on page 85
15 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering
16 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

21 Personal Construct Therapy: You Always Have Choices

> No one needs to be completely hemmed in by circumstances; no one needs to be the victim of his biography.
>
> – George Kelly, The Psychology of Personal Constructs (1955)

In every situation, you always have a choice of how to react. This insight is the basis of *personal construct therapy* (PCT). The goal of PCT is to develop awareness of your choices in every situation. The antithesis is to always react the same way to stressful situations.

If you make the same speech choices in high-stress situations, no amount of practice in a low-stress speech clinic will change your speech. E.g., if you always substitute words "when the going gets tough," you're not going to use gentle onsets in a difficult situations, even after practicing 5,000 gentle onsets in the speech clinic.

To develop awareness of your choices, describe a situation in which you stuttered. Imagine different ways you could have responded to the situation.

Role-play the scene with your speech-languge pathologist or in your support group. When someone sees a choice that hasn't been played, switch roles, for that person to play the new choice. E.g., the situation is answering the telephone at work. One person pretends to be a caller, and the other pretends to be the employee answering at Pasquale's Pizza. The employee uses slow speech. But another choice might be to switch to voiced consonants[1], i.e., answering the phone *Basdahllee's Bizza*. You should be able to think of a half-dozen other possibilities. Role play every choice and see what feels best.

21.0.2 Slow Down by Not Interrupting

Conscious choice requires slow reactions. In a fast reaction to environmental stimuli, your brain will select the most myelinated (habitual) open-loop motor program[2]. Interrupting people, or responding quickly in a conversation, is a fast reaction.

Let people finish their sentences. Wait two seconds. Then start talking. Your fluency will improve.

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1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FThree%20Stages%20of%20Motor%20Learning%23Voice%20and%20Voiceless%20Consonants

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FOpen-%20and%20Closed-Loop%20Speech%20Motor%20Control%23Open-Loop%20Motor%20Control

21.0.3 Verbal Aikido

[w:Aikido|Aikido] is a Japanese martial art. Combatants focus not on punching or kicking opponents, but rather on using their own energy to gain control of them or to throw them away from you.

Verbal aikido is the art of not arguing, but instead agreeing with someone who is verbally attacking you. Then you help the assailant attack you, until–surprise–he realizes that he's just been made to look like a fool.

E.g., a middle-aged, overweight woman owned a chain of women-only health clubs. Middle-aged, overweight women could work out in these health clubs without feeling intimidated by young male bodybuilders.

A "shock jock" radio host invited the health club owner onto his show. He described her physical appearance, then asked why anyone would want to work out at a health club owned by a fat, ugly old lady.

She responded, "So we don't have to work out with boorish meatheads like you."

This silenced the radio host long enough for her to say that overweight, middle-aged ladies have to exercise too, and the radio host was a perfect example of the men she didn't want to have to be around when she exercised.

My example of the parents responding to their teenagers' four-letter words[3] is another example of verbal aikido.

Use verbal aikido to turn around the stress. E.g., a highway patrol officer pulls you over for speeding. Instead of trying to hide your stuttering, you make a joke: "I stutter, so I'm not going to try to talk you out of giving me a ticket." Maybe this will put the officer in a good mood and let you go with a warning.

21.0.4 Changing Self-Descriptions

Many stutterers improve their speech, yet continue to believe that their speech is worse than non-stutterers. Graduates of fluency shaping therapy programs sometimes have beautiful, clear speech that is easier and more pleasant to listen to than non-stutterers' speech. Yet they continue to believe that they can't do certain things, such as public speaking.[Andrews1974]

Conversely, stutterers who improve their speech attitudes have better speech a year after completing therapy, as compared to stutterers who maintain poor attitudes.[Guitar1978]

Write a description of yourself, and then describe who you expects to be in five years. Look for items that are opposite in the two descriptions. E.g., now you're now single, but in five years you hope to be married.

Then write a description of yourself as a stutterer, and then describe who you'd be if you didn't stutter. E.g., assertive vs. shy, or popular vs. lonely. These descriptions are your *personal constructs.*

3 Chapter 14.3 on page 53

Work on changing your personal constructs. Again, imagine specific situations for each personal construct. E.g., if you wrote that you'd be assertive instead of shy, describe a recent situation in which you weren't assertive. Now role-play the scene with your speech-language pathologist or your support group. Imagine different ways to react in the situation and switch roles.

21.0.5 "Who Would I Be If I Didn't Stutter?"

This is a favorite conversation topic at stuttering support groups. People initially say, "I'd be more successful at work," "I'd be more assertive with my husband and family," and other *negative* aspects of stuttering.

After fifteen minutes, people start saying, "If I didn't stutter, I'd be less compassionate," or "I would never have developed my musical talent." People realize that they chose a career in a "helping profession" (e.g., nursing or teaching), or they developed non-verbal skills, such as athletics or painting, because they stutter. They realize *positive* aspects of stuttering. They see that stuttering can be a gift.

In contrast, a stutterer completed a speech therapy program, but refused to speak fluently. He said that his co-workers had listened to his stuttering for 20 years. He asked, "What would they think if I came to work speaking fluently?"

Another stutterer was earning $25,000/year as a computer programmer. His supervisor left, and the company wanted to promote the stutterer. He would receive a salary of $55,000/year. The management position required talking to clients on the telephone. The company offered to pay for speech therapy and an anti-stuttering device. The stutterer refused the promotion, saying that he didn't want to talk to anyone. The company instead hired a less-qualified manager from outside the company.

For these stutterers, the psychological issues surrounding stuttering are more disabling than their disfluencies.

21.0.6 Change Your Lifestyle

As your improve your fluency, ask your supervisor for tasks that require talking. Do social activities that involve talking.

Training a new motor skill requires about three million repetitions[4]. To say three million words, you must talk at least four hours a day for at least six months.

Take an acting class. Take singing lessons. You'll have fun, and meet new people. You'll get over your speech-related fears.

You'll find some things other people can easily do that you can't, but you'll also find things you can easily do that other people can't. E.g., I took a public speaking course. I was able to project your voice, when other students are afraid to raise their voices. I was able to

4 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FAutomatic%2C%20Effortless%20Fluency%23How%20Long%20Does%20Autonomous%20Learning%20Take%3F

switch emotions (anger, sadness) easily and convincingly, when other students couldn't. And there were simple presentations that you couldn't understand a word I said.

Volunteer to read to blind or elderly individuals. Volunteer at a hospital directing visitors where to go. Volunteer with your public radio station answering pledge week calls.

Or moonlight at a job that requires talking. Find a job that requires being charming and friendly.

Join social clubs that requires talking. Put Toastmasters at the top of your list. Members give a series of ten speeches, usually one speech per month. The speeches are four to ten minutes long. Each of the ten speeches teaches you a new skill, such as using gestures and body language, or being persuasive on a controversial topic. Judges always point out things you did well–and award lots of ribbons–as well as ways you can improve. You'll find that even if you stutter severely, you're better than non-stutterers at some aspects of public speaking.

The National Stuttering Association[5] has its own public speaking training program, which is quite different from Toastmasters. Ask for the "Speaking Circles" video.

21.0.7 References

1. [Andrews1974]Andrews, G., Cutler, J. "Stuttering Therapy: The relation between changes in symptom level and attitudes." *Journal of Speech and Hearing Disorders, 39,* 312-319, 1974.
2. [Guitar1978]Guitar, B. & Bass, C. (1978). "Stuttering therapy: The relation between attitude change and long-term outcome." *Journal of Speech and Hearing Disorders*, *43*, 392-400.

Category:Speech-Language Pathology[6]

5 http://www.nsastutter.org/

6 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

22 Treating Psychological Issues

Experts have proposed dozens of psychological causes for stuttering. Then they use psychological tests to test their hypotheses. And, every time, the tests prove the "experts" wrong. But this doesn't stop the experts from writing books promoting their theories.

In 1928, a Freudian psychologist advanced a theory that stuttering was an attempt to satisfy unresolved oral-erotic needs.[Bloodstein1995] If this were true, there would stuttering phone sex lines. Imagine finding ads in the back of *Playboy* magazine with scantily-dressed women saying, "Call me! I stutter!"

A 1939 personality test study found that stutterers were more neurotic, more introverted, less dominant, less self-confident, and less sociable than non-stutterers.[Bloodstein1995] Examination of the personality test found sixteen speech-related questions, including "If you are dining out do you prefer someone else to order dinner for you?" The psychologists had interpreted stutterers' reluctance to order in restaurants as evidence of neuroses, rather than as difficulty talking.

A 1952 study of hostility and aggression found stutterers more likely to turn hostility inward. A 1953 study found the opposite.[Bloodstein1995]

Other psychological studies found no difference between stutterers and non-stutterers for self-concept, levels of aspiration, body images, role perception, handwriting, social maturity, birth order, exaggerated fears, sleep disturbances, hyperactivity, temper tantrums, thumb sucking, and nail biting.[Bloodstein1995]

Stutterers are, on average, psychologically normal, except for fears and anxieties around talking. We generally have the same speech-related fears and anxieties as non-stutterers, such as fear of talking to strangers and fear of speaking to an audience, but these fears are greater in stutterers.

22.1 Freedom to Speak–Badly

From the book How to Learn Any Language:

> Americans, however, hold one high card that too frequently goes unplayed. We're gregarious. We're extroverts. Some say it contemptuously. Some say it admiringly. But those who know us best agree that we Americans are the only people in the world who enjoy speaking another language badly!
>
> Most people in the world are shy, embarrassed, even paralyzed when it comes to letting themselves be heard in languages they speak less than fluently. An American may master

> a foreign language to the point where he considers himself fluent. A European, however, who speaks a language equally well and no better will often deny he speaks it at all!

Are you an American–happy to talk even when your speech isn't good? Or are you a European–"shy, embarrassed, even paralyzed" when you can't speak fluently?

Or are you Chinese? In China, stutterers are expected to keep their mouths shut because stuttering will embarrass their families. You don't want the neighbors to find out that your brother stutters, so you find him work that doesn't require speech, and he stays at home the rest of the time.

If that doesn't sound fair to you, stick an American flag pin in your lapel. Then go out and speak English–badly, if you have to.

The First Amendment to our Constitution is freedom of *speech*. Our ancestors believed that talking is the most basic human right. If you don't want to talk, are you throwing away the fundamental freedom that previous generations fought for?

Change Your Lifestyle to Talk More

Ask your supervisor to give you work requiring talking. This could be talking to customers, or calling suppliers, or training other employees.

Or change careers to a job that requires talking. A man bought an anti-stuttering device, quit his job as a back room accountant at a bank, then worked at the Chicago Board of Trade, yelling orders to buy or sell soybean futures.

Or find a volunteer service requiring talking. Hospitals have information booths where volunteers direct visitors to their floors. Public television stations need volunteers to answer the phones during pledge drives.

Political groups need canvassers to collect signatures on petitions. Pick a cause you believe in. Imagine yourself standing on a busy street corner, talking to passerby about an important issue. Can you picture anything more American?

Complimenting People

Here's another way to make the world a better place. Make eye contact, smile, and then compliment a person.

Don't limit this to attractive, single persons of the opposite sex. Make everyone you meet feel good about themselves. Compliment old men, women pushing strollers in the park, the person behind you in the supermarket line, and your in-laws.

Here are a few compliments you can make about anyone:

- Compliment the person's smile. Then smile. This will make the person smile. Add a little joke such as, "Give my compliments to your orthodontist."
- Compliment the person's eyes. This reminds you to make eye contact. Look into the person's eyes long enough to mentally note his or her eye color. A friend broke up with

her boyfriend when, wearing sunglasses, she asked him what color her eyes were. He didn't know.
- Compliment the person's name. This helps you remember the person's name. Associate the person's name with an interesting fact, e.g., ask how his or her name is spelled (e.g., Rebecca vs. Rebekah), the ethnic origin, or the meaning of the name. (I got a date with a woman named Alethea because I knew that *alethea* is Greek for *truth*). Ask if the person is related to a celebrity with the same last name. Read a history of your area to learn the names of local heroes and historical figures.
- Compare the person to a celebrity. (A friend writing a personal ad asked if she looked like Natalie Merchant or Neve Campbell. I replied that she reminded me more of a young Tommy Lee Jones.)
- Listen for extraordinary things people have done, then reflect this back to them. Everyone thinks that their lives are ordinary. E.g., a man who flies jet fighters thinks of himself as an ordinary fighter pilot.

Tell Stuttering Jokes

> A stutterer goes away to a two-week intensive speech therapy course on the East Coast. When he returns, his friends ask how it went.
>
> The stutterer pauses, takes a deep breath, and slowly says, "Peter Piper picked a peck of pickled peppers."
>
> His friends are amazed. "You said that completely fluently!" they say.
>
> The stutterer says, "Y-y-yeah b-b-but it's, it's h-h-hard t-t-to w-w-work th-that in-t-to a, a c-c-conversation."

Add more stuttering jokes!

22.2 Inward Anger vs. Outward Anger

Stuttering, like any frustrating experience, causes anger. Some individuals direct these feelings inward (i.e., they hate themselves). This leads to a vicious cycle or "self-fulfilling prophecy" of failure.

But other stutterers direct these feelings outward. These individuals feel anger at other people. Their relationships at work or socially go poorly, again creating a vicious cycle of failure.

How do you feel when people disrepect you when you stutter? Do you feel anger at yourself for stuttering? Or do you feel anger at the person who treated you poorly?

When you're angry, do you do nothing, but get angrier inside? That's inner-directed self-hatred.

Or do you take action to "send a message" nonverbally–which the other person is certain to misunderstand? I once "sent a message" to my housemates that it was their turn to buy toilet paper. Don't ask me what I did! They didn't get the message. They just got angry back at me. That didn't lead to domestic bliss.

If you're doing fluency shaping therapy[1] use slow, stretched syllables when telemarketers call. Do you look forward to annoying telemarketers? If so, your anger is directed outward. But if you refuse to annoy telemarketers, your anger is directed inward.

Outer-directed anger is easier to outgrow than inner-directed anger. E.g., you can't wait for telemarketers to call. You have your DAF device plugged into your telephone. You sit down to dinner, and the phone rings. It's the Munificent Police Protective Association. You happily draw out a forty-five minute conversation. Your dinner gets cold but your speech gets better. Then a friend calls, and you speak fluently at a slow-normal rate. You feel good about yourself and your anger drops away.

In contrast, if your anger is inner-directed and a telemarketer calls, you decide not to practice your speech therapy, you stutter a "No, thank you" to the telemarketer and hang up. Your speech doesn't improve and your self-hatred continues.

If practicing speech therapy with a telemarketer scares you, have your speech-language pathologist pretend to call you. She'll try to sell you slow pitch bats, slow blow fuses, stainless steel slow cookers, and slow jam CDs. If you can't think of anything to say, ask, "How slow are the slow pitch bats?"

Then call her, reversing roles. Convince her that your slow blow fuses are the slowest, and that no one makes a slower slow cooker. Practice this until you're willing to practice therapy skills with a telemarketer.

22.3 Denial Is a Bigger Problem Than What You're Denying

I had a neighbor with schizophenia. He went to a dentist for a root canal, and the CIA put a radio into his tooth. The government was broadcasting messages to his brain.

Like 40% of schizophrenics, he denied that he had the disorder. He'd lost his job as a chemical engineer, and now worked as a minimum-wage security guard. He had no friends other than me.

My neighbor enjoyed reading French and Italian newspapers at a university library. He'd take the newspapers to the basement where no one would hear him repeating obscenities to annoy the CIA agents listening to his thoughts. One day security guards asked him to leave. To get away from them he ran into traffic in a busy street. He wasn't allowed to use the library after that.

Consider what would have happened if he'd told a librarian that he had a mental illness that made him talk to himself, and asked if there was somewhere he could read the newspapers without disturbing anyone. The librarian would have unlocked a conference room for him to use.

Denying that he had schizophrenia took a lot of effort. His life would have been simpler if he admitted that he had the disorder. If you put more effort into denying that you have a disorder than the treatment would demand, then you have a denial problem.

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Therapy%2FFluency-Shaping%20Techniques

He'd ask me whether I thought he was crazy. I'd say, "You're crazy if you deny that you have a mental illness. If you admit it, then you're not crazy."

Avoidance is Denial

Denial can look like avoidance. Many stutterers will spend two hours driving to a store to see if the store has an item, instead of spending two minutes calling the store (and experiencing the embarrassment of stuttering).

Many stutterers substitute words. E.g., saying "the great American pastime" instead of "baseball." That's eight syllables instead of two, and some listeners won't know what you're talking about.

When avoiding stuttering takes more effort than stuttering, you're denying how much effort avoiding stuttering takes.

Here's an extreme example of avoidance. A woman called me, inquiring about stuttering treatments. Her husband was a computer software engineer. He'd stopped talking. He'd requested a demotion at work to a position in which he never spoke to anyone. He sat in his cubicle, communicating by e-mail. At home he no longer spoke to his wife or children. He stopped participating in social activities or friendships. His wife was considering divorce. But first she was learning everything she could about stuttering, in hopes of finding something that would enable him to speak.

Did this man have a stuttering problem? Or did he have a denial problem? He thought he could make his life easier by not talking. But the effort required to not talk (e.g., an unhappy marriage) outweighed the effort of talking (e.g., to his wife, who already knew and accepted that he stuttered).

"I Can Do It Without Help" Is Denial

A friend lives in a state that provides anti-stuttering telephones free (see State Special Telephone Equipment Programs[2]). He stutters moderately to severely. I suggested that he fill out the application to get an anti-stuttering device. He said no, he'd been to a good speech therapy program, and he knew what he had to do. He was determined to improve his speech without electronic devices, medications, or other help.

It's been five years since he went to that speech therapy program. He still stutters. He's denying that the speech therapy program wasn't helpful. He's denying that he doesn't know what to do to improve his speech. He's denying that he needs help.

In contrast, a stutterer not in denial will use whatever's avail-able to improve his speech. If your state wants to give you a telephone that helps you talk fluently, why not take it?

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFinding%20Help%20Paying%20for%20an%20Anti-Stuttering%20Device

22.3.1 "But I've Tried Speech Therapy" Is Denial

Consider why crazy weight loss diets attract customers. People try the "pizza and ice cream" diet, it doesn't work, and then they can say that they tried to lose weight but the diet didn't work. Therefore no diet, exercise plan, or anything else will ever work. Therefore they have an excuse to be overweight. These people chose the "pizza and ice cream" diet instead of the salads and running ten miles a day diet. They chose a fad diet because they knew it wouldn't work.

Similarly, some stutterers go to one speech therapy program, it doesn't help, and then write articles saying that "achieving fluency is nearly impossible" and "stuttering is a physical impediment for which little can be done."[Yeoman1998] That's also denial. The person avoids effective treatments, by denying that effective treatments exist.

Denying the Most Important Thing in Your Life

I was unaware how severely I stuttered (see My Life in Stuttering[3]). I thought that I had a minor speech problem. I tried to do everything that everyone else does. When I consistently failed at things most people seemed to effortlessly achieve (e.g., finding a job, finding a girlfriend) I didn't realize it was because talking to me was an excruciating experience for listeners. No one told me that. They just avoided me.

Did I have a denial problem? Yes–but let me tell you about an accountant I had dinner with. He worked for the local government. He kept pen and paper next to his bed because he'd wake up with ideas of how to solve accounting problems at work.

My first thought was, this guy needs a life! He dreams about accounting!

Then I thought, he thinks about accounting 24/7. He must be a good accountant. When I need an accountant I'll hire him.

My speech improved after I was 30, when I made stuttering the center of my life. I thought about stuttering 24/7. I'd wake up with ideas for how to solve speech problems. Speech therapy changed from something I did two hours a week in speech clinics, to what I did all the time.

My denial problem wasn't that I didn't admit that I stuttered. My denial problem was that I didn't admit that stuttering was the most important thing I did. I'd pushed it to the side and focused on other things.

Whatever you focus on, you can achieve. It may take years of persistence but you will succeed. But you can only think about one thing 24/7. You don't want to spend your life climbing a mountain, get to the top, then see that you climbed the wrong mountain.

Miracles Happen

Miracles happen when you focus on the most important thing in your life, and then everything else falls into place, effortlessly. E.g., you improve your speech, then your boss gives you

3 Chapter 43 on page 157

a promotion. Then the pretty blonde at the photo store wants to be your girlfriend. It happened to me, and it'll happen to you. To read about more miracles, see the appendix Famous People Who Stutter[4].

But before your miracles can happen, think about my question. Is stuttering the most important thing you do? If you're a severe stutterer, as I was, the answer may be yes. Miracles aren't going to happen in your life until you think about stuttering 24/7. If your child stutters, you may have to focus on your child's treatment, rather than leaving it to the school's speech-language pathologist.

But if you're a mild stutterer, stuttering might be the wrong mountain for you to climb. You might be focusing your energy on avoiding stuttering, when listeners don't care whether you stutter. They might even like hearing you stutter occasionally. Maybe you should put your energy somewhere else.

22.3.2 References

1. [Bloodstein1995]Bloodstein, Oliver (1995) *A Handbook On Stuttering*, 5th edition, San Diego: Singular Press.
2. [Yeoman1998] Yeoman, Barry. Wrestling with Words[5], *Psychology Today*, November/December, 1998.

Category:Speech-Language Pathology[6]

4 Chapter 30.0.1 on page 125
5 http://www.mnsu.edu/comdis/kuster/Infostuttering/yeoman.html
6 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

23 Improving Self-Awareness of Stuttering Behaviors

Self-awareness of stuttering behaviors is the foundation of stuttering therapy. Have a friend or your speech-language pathologist videotape you speaking. Watch the video. For some stutterers, watching that video will be the hardest thing you've ever done. Some stutterers are unaware of their stuttering, or the severity of their stuttering. You can't couldn't change behaviors that you are unaware of.

23.1 Transcribe Your Speech

If your ego can handle more difficult homework, have someone videotape you in a stressful speaking situation. The tape should have you talking for at least three minutes.

Now play the tape back, and transcribe what you said. Count the syllables.

Watch the tape again, counting your dysfluencies. Calculate your stuttering rate. 2% or fewer dysfluent syllables is normal speech. 3-5% dysfluent syllables is mild stuttering. 6-10% is moderate stuttering. More than 10% dysfluent syllables is severe stuttering.

Watch the tape again, measuring your speaking time. Calculate your speaking rate in syllables per second. Non-stutterers can speak about five syllables per second, or three hundred syllables per minute.

Watch the tape again. Mark each dysfluent syllable in your written transcript.

Watch the tape again. Note each *type* of dysfluency:

- For repetitions, write down every repetition, e.g., "b-b-baseball."
- For prolongations, underline the prolonged sound.
- For silent blocks, write "<block>".

Watch the tape again. Pick out your three longest dysfluencies and time each. Write the times on your transcript.

Watch the tape again. Note your secondary symptoms. Write down every head jerk, facial grimace, eye blink, etc.

When you're finished, read aloud your transcription. Perform your stuttering exactly as did on the tape.

Give your script to your speech-language pathologist. Ask her to perform your script, modeling[1] you.

1 Chapter 14.3 on page 53

23.2 Your Stuttering Autobiography

Write your stuttering autobiography. Add it to the chapter My Life in Stuttering[2].

Describe how stuttering affected your childhood, teenage years, and adult life. Describe your inner, emotional experience of stuttering. Describe each therapy program you've done, and the results.

23.3 Over- or Underaware of Stuttering?

Mild stutterers typically think their speech is worse than it is. A mild stutterer has one little block on *baseball* and panics. He thinks, "Did the listener notice? I should have been paying attention and seen that a *b* was coming up. Next time I'll say 'the great American pastime' instead. Or better yet, I'll keep his mouth shut for the rest of the day."

Severe stutterers typically think that their speech is better than it is. Listeners impassively pretend not notice. During severe blocks, time stops for the stutterer. If you'd asked me how long a dysfluency had been, I would've said a second or two–even when it was actually five minutes or more.

Paradoxically, severe stutterers can be mentally healthier than mild stutterers. They can't hide severe stuttering. Severe stutterers can be willing to work hard at speech therapy. Fluent speech motor exercises, even at two-second stretch, get words out faster than severe stuttering. When severe stutterers learn to talk fluently, they often (not always) easily develop normal professional and personal relationships.

In contrast, mild stutterers, who can hide stuttering, often have more severe psychological disabilities. They're hesitant to do speech therapy. Using therapy skills (e.g., slow speech, or voluntary stuttering) alerts listeners that the individual stutters. Even if they successfully complete a speech therapy program and can talk fluently, they think their new fluent speech sounds "weird" and prefer their old speech (even after they hear themselves on tape and admit that their new speech sounds normal). Fluency shaping speech therapy can be a breeze for mild stutterers, because their brains don't need much rewiring. But their psychological disabilities can keep them from talking for years.

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2 Chapter 43 on page 157

3 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

24 Anti-Stuttering Devices

This chapter is divided into sections:

- How Anti-Stuttering Devices Work[1]
- Delayed Auditory Feedback (DAF)[2]
- Frequency-Shifted Auditory Feedback (FAF)[3]
- Masking Auditory Feedback (MAF)[4]
- Sound Quality, Background Noise[5]
- Hearing Safety[6]
- Finding Help Paying for an Anti-Stuttering Device[7]
- FDA and Other Regulations[8]

24.1 Specific Devices

- Casa Futura Technologies[9]
- Defstut[10]
- DAF/FAF Assistant[11]
- Edinburgh Masker[12]

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FHow%20Anti-Stuttering%20Devices%20Work
2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FDelayed%20Auditory%20Feedback
3 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFrequency-Shifted%20Auditory%20Feedback
4 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FMasking%20Auditory%20Feedback
5 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSound%20Quality%2C%20Background%20Noise
6 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FHearing%20Safety
7 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFinding%20Help%20Paying%20for%20an%20Anti-Stuttering%20Device
8 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFDA%20and%20Other%20Regulations
9 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FCasa%20Futura%20Technologies
10 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FDefstut
11 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FArtefactsoft
12 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FMasking%20Auditory%20Feedback

- Fluency Pal[13]
- Speech Monitor[14]
- Kay Elemetrics Facilitator[15]
- FluencyCoach DAF/FAF[16]
- Fluency Master[17]
- Fluency Enhancer[18]
- Ovation Speech Fluency System [19]
- SpeechEasy[20]
- VoiceAmp VA 601[21]

24.2 External Links

- Electronic Devices and Stuttering Treatment[22]

Category:Speech-Language Pathology[23]

13 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency%20Pal
14 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Monitor
15 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFacilitator
16 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluencyCoach
17 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency%20Master
18 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency%20Enhancer
19 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FGriffin%20Labs
20 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeechEasy
21 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FVoiceAmp
22 http://www.mnsu.edu/comdis/kuster/TherapyWWW/dafjanus.html
23 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

25 Anti-Stuttering Medications

25.1 Dopamine Antagonist Medications

Psychiatrist would like to use dopamine antagonists to reduce stuttering. However, these medications have side effects. Also, the long-term effects of the following medications are unknown. In some patients, even placebo can temporarily reduce stuttering. Rather than taking medication indefinitely, it may be better for a severe stutterer to take a medication at the start of a stuttering therapy program, and then reduce his dosage as his fluency improves, until he no longer needs the medication.

If you suspect that your child's medication contributes to his or her stuttering–especially if your child is on several medications–I suggest that you consult a doctor. No drug has been more effective than placebo in clinical trials.

25.1.1 Haldol

Haloperidol (Haldol) is an old dopamine antagonist. It was the first medication to reduce stuttering in two clinical trials.

The side effects can be severe.

25.1.2 Risperdal

Newer medications more narrowly target certain dopamine receptors. The dopamine D2-receptor antagonist risperidone (Risperdal) reduces stuttering about 50%.[Maguire1997] Like other stuttering therapies, the drug is most effective in low-stress situations, and least effective in high-stress situations.

The drug is FDA-approved only for short-term (6-8 week) treatment of schizophrenia. Side effects include insomnia, agitation, anxiety, somnolence, extrapyramidal nervous system disorders, headaches, dizziness, constipation, rhinitis (a breathing disorder), rashes, tachycardia (a heart disorder), and breast growth in men and women (due to increased levels of the hormone prolactin), and neuroleptic malignant syndrome (potentially fatal).

25.1.3 Zyprexa

Olanzapine (Zyprexa) reduces stuttering on average 33%.[Riley2002] Side effects may include permanent damage to the frontal lobe, weight gain, and drowsiness.[Gottlieb2002]

25.1.4 Other Dopamine Antagonists

Pimozide[Stager1997] and Tiapride[Rothenberger1994] are other dopamine antagonists that have been reported to help stutterers. Pagoclone[1] is currently being tested on stutterers.

25.2 Antidepressants Increase Stuttering

Some antidepressant medications boost dopamine. These medications include the selective serotonin reuptake inhibitor (SSRI) class, which includes Prozac and Zoloft. These medications have increased stuttering in stutterers. In a few cases, these drugs caused non-stutterers to stutter. However, there is no real evidence of this.

Another stutterer wrote:

> I have tried 3 antidepressants: Prozac, Wellbutrin, and Zoloft. All increased my stuttering noticeably. The antidepressants that I have tried make me more able to get out of bed in the morning and restore my "get up and go"; however, they have caused me to go from being a person with a barely noticeable stutter to a more pronounced stutter. I had more occasions to talk.
>
> I went into my psychiatrist yesterday and explained that the current antidepressant is making my stutter significantly worse. However, in the 10 minutes we talked I was practically perfectly fluent. He then concludes that obviously "it's not that unmanageable."
>
> He prescribed 10mg Propanolol to take before I have to be in a difficult speaking presentation. It is supposed to "reduce performance anxiety." I don't feel like I have a tremendous amount of performance anxiety; stuttering just isn't very fun. I think he doesn't believe me about the severity of the stuttering.

25.2.1 Anti-Depressants and Stutter

> I have tried one tri-cyclic anti-depressant called Trazodone, 150mg/day. After about a month of taking the pills I experienced mild to serious stuttering. I never remembered stuttering before or never had anyone comment on my stutter. The stutter brought on even worse anxiety while still on the pills. I then found myself having worse performance anxiety as well.
>
> A month after stopping the regular taking of the pills my stutter was almost completely absent.

25.3 Other Medications and Drugs

25.3.1 Ritalin

A speech pathologist asked on the Internet:

1 `http://www.indevus.com/product/pagaclone.asp?page=pagaclone`

> I'm treating an 8-year-old diagnosed ADHD and who suddenly began stuttering (advanced core and secondary behaviors) without any prior history of dysfluency, as a side effect of the medication Ritalin. He's had a whole neuro work-up which revealed nothing.

Another speech pathologist responded that many of the children he treated for stuttering were on Ritalin for ADHD.

Pharmacist Richard Harkness advises against Ritalin for children who stutter:

> Ritalin increases dopaminergic neurotransmission and is contraindicated for use in those with Tourette's disorder. Ritalin has also, in rare cases, brought on symptoms of Tourette's disorder. Tourette's disorder has been likened to stuttering in that it involves a flaw in dopaminergic neurotransmission.

25.3.2 Botulinum Toxin

Botox, the toxin in botulism, has been injected into stutterers' vocal folds. The toxin partially paralyzes your vocal folds so you can't get into hard blocks. You also can't talk loudly or forcefully. The toxin reduces stuttering somewhat. It wears off in a few months, and you get a second shot. The second shot reduces stuttering less than the first. By the third shot, the toxin usually has no effect on stuttering.

25.3.3 Tranquilizers

Some doctors prescribe tranquilizers to stutterers on the erroneous belief that nervousness causes stuttering.

> A psychiatrist had some pills he thought might help. Einer was to take one per day during the week remaining before the great day, and one extra big super pill on the morning of the wedding. The pills made him feel somewhat relaxed but had no noticeable effect on his speech. The wedding arrived, Einer took his super pill, and went off to London on the train to meet his relatives who had come for the ceremony.
>
> An hour before the wedding Einer had still not returned. I kept the smiling calm that I had learned to assume in the face of all our difficulties and began dressing. Half an hour later I stood in white satin complete with veil and bouquet, looking out of the bedroom window towards the railway station, wondering what could have happened and preparing myself mentally for a last minute cancellation of the wedding. Had he thrown himself under a train, unable to continue life as a stutterer? Had he run back to Canada as a supreme act of avoidance? The minutes ticked by. Finally another train pulled in, and up the hill walked Einer, a lazy smile on his face, apparently unaware of the panic that he had caused. He had forgotten to take pencil and paper and so was unable to ask for guidance and had become hopelessly lost. However, the super pill had kept him smiling. I am glad to say that thanks to the kindly vicar in reading along with Einer, the wedding vows were the first and only fluent words my family heard Einer speak that summer.[BobergJ]>

In general, tranquilizers have "more effect on the complexity or severity of the [stuttered] blocks than on their frequency."[Bloodstein1995]

25.3.4 Alcohol

No researchers have studied the effects of alcohol on stuttering. Anecdotally, alcohol reduces stutterers' fears and anxieties (e.g., about talking to persons of the opposite sex) and so reduces stuttering. But alcohol reduces one's ability to use therapy techniques, so increases stuttering.

25.4 Experiences with Anti-Stuttering Medications

Please read Speech-Language Pathology/Stuttering/How to Participate in this Wikibook[2] before adding material to this section.

25.5 References

1. [Maguire1997]Maguire, G., Riley, G.D., Wu, J.C., Franklin, D.L., Potkin, S. "Effects of risperidone in the treatment of stuttering," in *Speech Production: Motor Control, Brain Research and Fluency Disorders*, edited by W. Hulstijn, H.F.M. Peters, and P.H.H.M. Van Lieshout, Amsterdam: Elsevier, 1997; Riley, G.D., Maguire, G. "National Enquirer Article" memo, 1998.
2. [Riley2002]Riley, Glyndon. "Medical Aspects Of Stuttering," *Stuttering Foundation Of America* newsletter, Summer 2002.
3. [Gottlieb2002]Gottlieb, Jeff. "Easier for Him to Say," *Los Angeles Times*, April 3, 2002.
4. [Stager1997]Stager, S., Calis, K., Grothe, D., Bloch, M., Turcasso, N., Ludlow, C., Braun, A. "A Double-Blind Trial of Pimozide and Paroxetine For Stuttering," in *Speech Production: Motor Control, Brain Research and Fluency Disorders*, edited by W. Hulstijn, H.F.M. Peters, and P.H.H.M. Van Lieshout, Amsterdam: Elsevier, 1997.
5. [Rothenberger1994]Rothenberger, A., Johannsem, H., Schulze, H., Amorosa, H., Rommel, D. "Use of Tiapride on Stuttering in Children and Adolescents," *Perceptual and Motor Skills*, 1994, 79, 1163-1170.
6. [Butcher1998]Butcher, S. Stut-hlp posting, January 27, 1998. Reprinted with permission.
7. [BobergJ]Boberg, Julia. Institute for Stuttering Research and Treatment, Edmonton, Alberta. Reprinted with permission.
8. [Bloodstein1995]Bloodstein, Oliver (1995) *A Handbook On Stuttering*, 5th edition, San Diego: Singular Press.

Category:Speech-Language Pathology[3]

I tried zyprexa for my stuttering and it just made me dizzy... took the small dose as recommended for a long period of time but was always drowsy. and my stutter was still there, so i stopped.

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FHow%20to%20Participate%20in%20this%20Wikibook

3 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

26 Alternative Medicine Therapies for Stuttering

Pagoclone.

Category:Speech-Language Pathology[1]

1 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

27 How We Treat Stuttering

How do you treat stuttering in your speech clinic or school? What works, and what doesn't?

To contribute to this page, first log in. Type your contribution, then sign it with two dashes and four tildes --~~~~. Then on a new line type <hr>. That puts a line (horizontal rule) between different people's contributions.

And please read Speech-Language Pathology/Stuttering/How to Participate in this Wikibook[1] before adding material.

Category:Speech-Language Pathology[2]

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FHow%20to%20Participate%20in%20this%20Wikibook

2 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

28 What Worked for Me

What stuttering treatments have you tried? What worked, and what didn't?

To contribute to this page, first log in. Type your contribution, then sign it with two dashes and four tildes --~~~~. Then on a new line type <hr>. That puts a line (horizontal rule) between different people's contributions.

And please read Speech-Language Pathology/Stuttering/How to Participate in this Wikibook[1] before adding material.

Category:Speech-Language Pathology[2]

What worked for me? Learning not to care so much. Yes, I still stutter - sometimes badly, and sometines I do care. But by learning not to worry about lesser lacks of fluency, the incidences of the greater ones has decreased.

The big breakthrough was in my early twenties. During my childhood and adolescence, my stutter was 'hushed up'. Nobody dared talk openly about it to me (other well-meant but unhelpful advice to slow down or calm down). But one day I found a book about stuttering in a library. This gave me the impetus to see a speech therapist. I must have exasperated her by not being particularly interested in anti-stuttering techniques. But the process of 'coming out' made the difference. For instance - most of the secondary effects such as eye-closing and head movements have long stopped.

I'm now in my 40s. Yes, sometimes I can be anxious about stuttering on the phone, or embarassed if I fluff a punchline - but it doesn't hamper me socially or professionally. And I can talk about it.

It's the least of my worries!

--20.133.0.14[3] 11:44, 18 May 2007 (UTC) David Carr

What worked for me was also to just stop caring about it. Just say the words even if it took time for me to say them and not care about what people say.

I struggled alot with my speech when I was younger and my life revolved around it. I lost all confidence in my abilities. Later a friend of mine asked me about my speech and didn't get why it was such a big deal for me. I would just practice saying words with her and slowly learnt to not care about how I'm saying it, as long as I end up saying it. The satisfaction and feeling of triumph I felt saying words I avoided for years before made all the effort worth it.

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FHow%20to%20Participate%20in%20this%20Wikibook
2 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology
3 http://en.wikibooks.org/wiki/User%3A20.133.0.14

I'm 21 now. I still have problem speaking fluently but that doesn't stop me from being free with my speech. I have stopped using methods like word substitution and saying sounds like "uhh" before saying difficult words. I feel confident and my speech is not a constant source of anxiety for me like it used to be.

--Rukmini[4] 21:24, 22 July 2007 (UTC)

4 http://en.wikibooks.org/wiki/User%3ARukmini

29 Practice Word Lists

These 357 words include every combination of consonant and vowel in the English language.

Word List 1

able

baby

chainsaw

dateline

famous

gatepost

halo

jaywalk

cable

label

mailbag

nadir

pacer

rabies

saber

shapeless

table

they

vacant

weightless

whale

zany

Word List 2

abbey (a monastery)

baboon

dancer

famine

gadget

hacksaw

jasmine

cabin

ladder

macro

knapsack

package

rabbit

saddle

shadow

tactile

than

thankful

vanish

wacky

Word List 3

achoo

baa

cha-cha

father

hah

calf

launch

macho

pasta

Word List 4

alarm

balloon

macaw

patrol

salon

taboo

Word List 5

eager

beachfront

cheap

dealer

feature

geese

healer

genius

kiwi

legion

meager

kneecap

peaceful

react

cease-fire

sheepdog

teak

thee

theme

V-eight

weasel

wheel

yeast

zeal

Word List 6

any

bedtime

checkbook

dentist

felon

guest

health

gentle

kettle

leather

meadow

nephew

peck

redwood

self-talk

shepherd

ten-speed

them

theft

vent

wealthy

whether

yell

zest

Word List 7

aisle

byte

child

diamond

fiber

guide

height

jive

cayenne

lion

micro

knife

pie

rhino

cyclist

shiner

thyme

thy

thigh

vibrant

wildcat

whitefish

yipe

xylan (plant substance)

Word List 8

image

bemoan

chipmunk

divide

fishbowl

gift-wrap

hitchhike

ginger

kibbutz

lily

midcourse

nimble

picture

rebel

system

shiftless

ticket

this

thicket

vicar

wizard

whimsy

yip

zigzag

Word List 9

oaken

boastful

choke

domain

focus

ghost

hoagie (sandwich)

joke

coleslaw

locust

motion

noble

pollster

romance

soapstone

chauffer

toaster

those

thole (endure)

vogue

woven

yolk

zonal

Word List 10

otter

bobcat

chocolate

docile

foggy

goblin

hobby

jogger

cobbler

lobster

model

knockout

pocket

robin

soccer

shocker

toddler

volley

waffle

whopper

yacht

Word List 11

alder

bald

chalk

daughter

fallen

gauntlet

hallmark

jaunt

caller

laundry

mossy

gnaw

pause

raucous

salted

shawl

talking

thoughtful

vault

walker

yawn

Word List 12

oil

boil

choice

doily (small napkin)
foible
goiter
hoist
join
coin
loin
moist
noise
poignant
royal
soil
toil
voice
yoicks (cry to encourage foxhounds)

Word List 13

ouster
bough
chow
downbeat (conductor's downstroke on first beat of a measure)
foul
gauss (measure of magnetism)
hound
jounce (bounce, jolt)
couch
loud
mountain
noun
pouch
round
sow

shout

tout (extravagant praise)

thou

thousand

vouch

wound (as in string, not as in injury)

yowl (cry of distress)

zounds (a mild oath)

Word List 14

oops (mild surprise or apology)

boomer

chew

deuce

food

goober (peanut)

hoop

juice

coolant

lunar

moon

nougat

poodle

rupee

sewage

shoe

tomb

woo

whoosh

U-boat

zoo

Word List 15

butte

deuce

feudal

gewgaw (showy trifle, bauble)

hewn

coupon

mule

neutral

pewter

tuba

view

whew

Word List 16

oomph

butcher

football

good

hoof

cookbook

lookout

nook

pudding

roof

soot

shook

took

wolf

whoops

Word List 17

onion

bubble

chubby

doesn't

fungus

govern

hovel

judge

color

love

money

knuckle

pump

rough

someday

shutter

touchdown

thus

thumbnail

vulgar

once

what

youngster

- Next chapter: Recommended Books[1]
- Back to Table of Contents[2]

Category:Speech-Language Pathology[3]

1 Chapter 44 on page 163
2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering
3 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

30 You're Not Alone: Join a Support Group

Likely you've never met another stutterer. You've never seen a book about stuttering in a bookstore. You may be the first stutterer that your speech-language pathologist has met. You might feel that you're the only person in the world with this problem.

Your speech-language pathologist printed a webpage for you with the time and place of stuttering support group. You put it off the first month, but this month you drive there. You drive by the house. You see a group of people in the living room. You sit in your car, not sure if you have the courage to walk into the house.

Let's back up to how you find a stuttering support group. The National Stuttering Association[1](`http://www.nsastutter.org/`) (800 364-1677) has more than 70 local support groups across the United States. Many stutterers say that the annual NSA convention is the best experience of their lives.

Speak Easy International has stuttering support groups in the New York-New Jersey area. Call Bob Gathman, at (201) 262-0895.

The National Association of Young People Who Stutter[2](`http://www.friendswhostutter.org/`) (866 866-8335) has support groups for children and teenagers who stutter.

Many speech clinics have their own stuttering support groups. These are often for practicing therapy. Practicing in a group is better than practicing alone because we learn best by seeing other people make mistakes and then improving. In contrast, seeing a speech-language pathologist (who likely doesn't stutter) perfectly executing a speech motor skill can make you feel like she has a gift you'll never have.

If you're outside the United States, find a stuttering support organization in your country by visiting the International Stuttering Association[3] (`http://www.stutterisa.org`) website.

Then there are the online support groups. Yahoo Groups[4] lists more than seventy stuttering e-mail lists, the most prominent and largest of these is Stuttering Chat[5], which has over 3000 members. The Usenet discussion group is [news:alt.support.stuttering alt.support.stuttering].

The online support groups tend to be a few individuals who do 90% of the chatting, and hundreds of people who don't write anything. I remember when one individual used several e-mail addresses and fake names to have long arguments with himself.

---

1 `http://www.nsastutter.org/`
2 `http://www.friendswhostutter.org/`
3 `http://www.stutterisa.org`
4 `http://groups.yahoo.com/`
5 `http://groups.yahoo.com/groups/stutteringchat`

Benefits of Support Groups

A support group will help you learn what works for other people. You'll get feedback on what you're doing. A group of people will generate new ideas that no individual would have thought of.

In a support group, you'll find that you've solved problems that other people face. Other people may have solved problems you face. Stuttering will no longer seem like one big problem, but rather will become a set of small problems.

A support group improves your emotional state. Hearing other people's experiences improves your perspective. Your setbacks don't seem so bad. Sharing positive experiences makes everyone in the group feel good.

When you feel frustrated or depressed, you have no idea what to do. Talking to individuals who've been in the same situation will help you see that you have choices (see the section Personal Construct Therapy[6]).

30.0.1 Support Group Activities

Talking About Your Stuttering

Mild stutterers may be able to successfully hide stuttering, but listeners figure out that they're hiding something. Listeners may not know what the stutterer is hiding, but he'll come across as "phony" or dishonest.

Listeners have a different message for severe stutterers. Severe stuttering disturbs listeners. They don't understand stuttering. They want to know if there's anything they can do to help you. But they're too polite to ask you about your disability. They want you to educate them. They don't want the proverbial "elephant in the living room" that no one will talk about.

The Disability Hierarchy

The least respected disabilities are non-physical and non-visible. Stutterers look normal, until we talk. Listeners feel shock seeing you go from normal behavior one moment to head jerks, facial spasms, stuck in repeating dysfluencies the next moment.

But you can move up the disability hierarchy. You can change your stuttering into a visible, non-physical disability:

- Tell people that you stutter.
  In contrast, hiding your stuttering throws away the respect and support that people would otherwise give you.

6 Chapter 21 on page 85

31 Famous People Who Stutter

The chapter is divided into sections because it exceeds the 32K limit of some browsers.

- Singers and Actors[1]
- Athletes[2]
- Writers and Photographers[3]
- Political and Business Leaders[4]
- Other Professions[5]
- British Royals and Commoners[6]
- More Stutterers in History[7]
- Serial Killers[8]
- In the Ancient World[9]

Category:Speech-Language Pathology[10]

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FSingers%20and%20Actors

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FAthletes

3 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FWriters%20and%20Photographers

4 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FPolitical%20and%20Business%20Leaders

5 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FOther%20Professions

6 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FBritish%20Royals%20and%20Commoners

7 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FMore%20Stutterers%20in%20History

8 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FSerial%20Killers%20and%20Murder-Suicides

9 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFamous%20People%20Who%20Stutter%2FIn%20the%20Ancient%20World

10 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

32 Stuttering and Employment

> I am 21 years old. I graduated from my third college course and still no job. Interviews come by the dozens but job offers are none! I am a Pharmacy Assistant Health Care Aide plus a medical transcriptionist, but after all the years in school and all the money spent on education, I am still unable to find work! Am I to live in poverty because people only see me at my worst?
>
> Interviews for me are a horrid experience. I've had people pick up a newspaper and start reading it, waiting for me to get out of a block. All the interviewers act as if I'm wasting their time. It's more like they're wasting mine.
>
> If people could only see me when I am fluent I'm sure I would have a job. On interviews I find myself apologizing for my speech but why do I?
>
> Is there anyone out there who is experiencing the same problems? I need help to cope.[Giret1996]

> I am an embedded software engineer, and today I was faced with a situation that I have not ran into yet in my pursuit of employment. Like many of you I have had the phone hung up on me by recruiters, or they rudely and quickly end the phone conversation. I had a personal phone interview with Motorola. First, the interview was designed to be very high stress. Second, the questions were given to me in advance which only made the situation worse. Of course it being a phone interview made it worst. I was unable to form sentences and completely locked up on the interview and was eliminated from the running for this software engineering position. Can I do anything? According to the recruiter I'm a great fit for the position, god this frustrating.

> Graduate students in my stuttering class [surveyed employers, who] indicated that they would prefer to hire someone who was deaf or someone with moderate cerebral palsy rather than someone who stuttered. Interestingly, several of the employers who said they would not hire a stutterer had one or more stutterers already working for them.
>
> When we probed to understand the WHY behind the employers' responses, we learned that essentially they thought they "understood" deafness and cerebral palsy, but stuttering was strange–and they assumed that persons who stutter were strange.[Freeman1993]

Ten months after completing a stuttering therapy program, 44% of stutterers had received a promotion. 40% had changed jobs, 36% reporting that the change was for the better. Combining these, about 60% had improved employment after stuttering therapy. The study also found that 88% of the stutterers had maintained their fluency.

Their employers reported a 20% improvement in "communication effectiveness" for the stutterers completing therapy.[Craig1991]

Stutterers earn approximately $7200 less per year than non-stutterers.[Schwartz1996]

```
Two groups of 25 persons were examined. The groups were matched for
age, sex, IQ, race, education, and socioeconomic background. The
subjects were contacted ten years after graduating from college. They
were asked a number of questions relating to levels of achievement.
The difference did not appear to be the result of employer
discrimination. Rather, the stutterers were reluctant to accept
promotions that involved making presentations to groups of people:
```

> I have refused (or went "kicking") different projects at my job, which may/may not lead to promotions. Most recently, I went kicking on co-facilitating a corporate-wide quality workshop initiative. My partner in facilitation, after much coaxing by me, took the majority of the speaking sections, while I became her assistant. (Please be aware that I have not discussed my disorder with my co-workers, I am a mild stutter that can usually "pass" for a fluent speaker.) I am now interested in changing careers and am looking for careers that focus on "behind the scenes" work i.e., technical writing. I have considered such careers as Law, but have veered away from them.[mail]

32.1 Talk About Your Stuttering

> Another interview lasted about two minutes. The interviewer (another personnel director–they seem to be the worst problem) found an excuse to say I was not qualified for the job–so good-bye. I protested, asked for the technical interview and was asked to leave. As his excuse was plainly made up–this was also probably a case of discrimination.[Bertollo]

Begin the interview by talking about your stuttering. You may only get two minutes if you don't!

Take a copy of *Stuttering: Answers for Employers* by the Stuttering Foundation of America with you to the interview. You can download a PDF of the brochure from the web site at www.stutteringhelp.org.

Whether you're looking for a job or already have a job, talk about your stuttering. Many people feel uncomfortable talking to a person who stutters. Educate them about stuttering to make them feel comfortable.

Some people make incorrect assumptions about individuals who stutter. E.g., some people think that individuals who stutter are mentally retarded–even if you have a Ph.D.!

"Excellent communication skills" is the #1 qualification employers look for. Regardless of whether the help-wanted ad included this, say that you have excellent communication skills. Give concrete examples:

- If you're in a speech therapy program, discuss your progress and the techniques or strategies you use.
- If you learned nonavoidance skills in speech therapy, explain that although you stutter, you've overcome your fears of talking to strangers, etc.

- "I can say a phrase fluently if I say it a lot. In my last job, I pretty much said the same things to customers all day, and my speech was fine." This should be acceptable for retail jobs, etc.
- If you use an electronic anti-stuttering device, show it to the interviewer and explain how it works.

If the job requires making presentations, say that you can't say as much as non-stutterers so you prepare your remarks in advance and get right to the main points, unlike people who ramble on for half an hour.

Membership in Toastmasters proves that you have excellent communication skills. Toastmasters gives out lots of prizes, so mention if you won a blue ribbon for one of your speeches.

Communication is a two-way street. Say that you may not speak as well as other people, but you listen more carefully. Demonstrate that by not interrupting the interviewer, and by rephrasing and repeating back his questions. Ask the interviewer whether listening or speaking is more important in the job–they'll always say that listening is more important.

> The interview for the job that I currently have was one of the few interviews in which I discussed in depth the nature of my stuttering problem. I spent about a half-hour discussing my speech, and I think that it was very helpful for the interviewer in understanding how well I could work around my handicap.[Morrow]

32.2 The Americans With Disabilities Act

In 1992, the Americans with Disabilities Act (ADA) outlawed employment discrimination against individuals with disabilities. Speaking was defined as a "major life activity" that the inability to do is disabling.

The central point of the ADA is that individuals with a disability can ask their employer (or potential employer) for a *reasonable accommodation*. A reasonable accommodation is a change to the job that will enable the individual to do the job. E.g., a stutterer might ask that he not have to answer the telephone. Or he might ask that the employer buy an anti-stuttering telephone.

When an individual with a disability requests a reasonable accommodation, the employer must make the accommodation. The individual must make the request. If the individual doesn't make such a request, the employer is not obligated to suggest an accommodation, or to hire the individual.

Employers aren't allowed to ask employees (or potential employees) about disabilities. It is essential that stutterers talk to employers about their speech. In a job interview, say that you stutter. Then ask whether your speech will interfere with the job. If you don't ask, winning a lawsuit will be difficult or impossible.

If your employer (or potential employer) tells you that "good communication skills" are necessary for the job, talk about the specifics. As noted above, you can explain that you have excellent communication skills. You can also ask for reasonable accommodations as necessary.

Stutterers rarely talk to their employers about their speech. The few stutterers who've told me that they talked about their stuttering with their employer reported 100% successful results of the conversation. In every case, the employer wanted to help the stutterer, but didn't know what to do. Every request was a reasonable accommodation has been granted, as far as I've heard.

The 99% of stutterers who don't talk about their speech with their employers are treated badly, in one way or another. When they feel they've been discriminated against, they don't win ADA lawsuits because neither they nor their employer ever said anything about their speech.

For more information about the ADA, visit the Equal Employment Opportunity Commission website[1] or http://www.justice.gov/disabilities.htm[2]. If you need to hire an attorney experienced with discrimination against stutterers, call the National Stuttering Association.

The ADA does not apply to the federal government, including the military services. The ADA covers only employment discrimination. If you experience discrimination or harassment outside of work, you will have to rely on other federal or state laws.

32.3 Vocational Rehabilitation

If you're looking for a job, make an appointment with a vocational rehabilitation counselor. Look in your telephone directory's blue (government) pages under your state's department of labor (or department of education in some states).

Voc rehab counselors want you to succeed. They'll get you whatever therapy, devices, or job training you need. I've heard many good reports from stutterers about voc rehab counselors.

A stutterer complained that, after paying for stuttering therapy and an electronic device, the counselor also wanted to pay for his CPA certification. The stutterer insisted he would pay for his own certification.

32.4 References

1. [Giret1996]Giret, Karen. Letting GO, National Stuttering Association newsletter, July/August 1996.
2. [Freeman1993]Freeman, Frances. 1993. University of Texas, personal correspondence.
3. [Craig1991]Craig, A., Calver, P. "Following Up on Treated Stutterers: Studies of Perceptions of Fluency and Job Status." *Journal of Speech and Hearing Research*, 34, 279-284, April 1991.
4. [Schwartz1996]Schwartz, Martin, 1996, Stutterers Earn Significantly Less 10 Years After Graduating College[3].
5. [mail]Personal e-mail.
6. [Bertollo]David Bertollo, e-mail.

1 http://www.eeoc.gov
2 http://www.justice.gov/disabilities.htm
3 http://www.stuttering.com/thencsr.htm

7. [Morrow]Tom Morrow, e-mail.
8. [Fraser]Fraser, Jane. Stuttering: Answers for Employers, The Stuttering Foundation of America. June 2006

33 How to Handle Telephone Calls

Download the PDF of the brochure *Using the Telephone: A Guide for Those Who Stutter*, a helpful guide for those who have difficulty speaking on the telephone, by The Stuttering Foundation of America from their web site at www.stutteringhelp.org.

Category:Speech-Language Pathology[1]

1 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

34 Public Perceptions of Stutterers

In alost everyday life people may think that stuttering is a big issue, but more people accept the fact that there are others who are in capable of speaking because of decrease fluency.

35 How the Media Presents Stuttering

36 Cultural and Ethnic Differences in Stuttering

A brochure by the Stuttering Foundation of America *Stuttering and the Bilingual Child* gives guidelines on how to help the bilingual child who stutters. It offers suggestions for reducing language demands on those children and includes ideas for structuring therapy. Download a PDF of the brochure at `http//www.stutteringhelp.org/`.

Category:Speech-Language Pathology[1]

1 `http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology`

37 High School Science Projects

37.1 Altered Auditory Feedback

High school students can build an altered auditory feedback device for a science project. Several alternatives are also possible:

- Find a DAF kit by doing a websearch for "delay echo reverb kit."
- Find a FAF kit by doing a websearch for "voice changer kit." Or rewire a voice changer toy (about $20) to use headphones instead of a speaker.
- Find a MAF kit by doing a websearch for "function generator kit." MAF uses a 105 Hz sine wave.
- Guitar effects processors usually have both reverb (DAF) and frequency-shift (FAF) effects.
- Writing your own DAF software is easy. FAF software is harder, as it requires a fast Fourier transformation (FFT) for octave-scale FAF. DAF/FAF software can be downloaded for about $30 from http://www.artefactsoft.com[1].
- Set up a computer to measure and display your vocal amplitude and frequency. Use a Radio Shack multimeter with a frequency counter and computer output. With a microphone the total cost should be $100-150. Or look for audio recording software with frequency analysis.

You can do the following experiments on yourself, or find volunteer subjects in your stuttering support group. Ask your speech-language pathologist to help you find a support group, or call the National Stuttering Association at (800) 364-1677. Experiments to do:

- Tape record a stutterer's speech at fast and slow speaking rates, without the device; and then with DAF set at 50 ms, 100 ms, and 200 ms. Count the number of disfluencies per minute, and the number of syllables per minute. Graph the relationship between fluency and speaking rate.
- Do you agree with speech-language pathologist Janice Costello-Ingham, Ph.D., that "the functional variable in regard to the reduction of stuttering is not DAF, but prolonged speech, and the latter can be produced without reliance on a DAF machine"[Costello1993] or do you agree with speech-language pathologist Joseph Kalinowski, Ph.D., that "a slowed rate of speech is not a necessary antecedent for fluency improvement under conditions of altered auditory feedback."[Kalinowski1996] I.e., does DAF improve speech only when the stutterer talks slower, or does DAF improve speech at normal speaking rates?
- Math and physics: measure and calibrate the delay control of a DAF device. You'll need a frequency generator, frequency counter, and a dual-trace oscilloscope. Feed a sine wave into the DAF device. Set up the oscilloscope to display the input and output of the

1 http://www.artefactsoft.com/

DAF device. At what frequencies do the two waves match? Find at least three matching frequencies for each DAF setting. Divide one by the differences between the matching frequencies to get the delay length, in milliseconds. Explain why this works.
- Use the DAF device on a person who does not stutter, at different delay settings. How is the DAF effect different on individuals who don't stutter, and persons who stutter?
- Tape record a stutterer speaking (without DAF) for at least three minutes. Then have the person speak with DAF for ten minutes. Take off the device and record another three minutes of speech. Does DAF cause carryover fluency (after removing the device)?
- Show how to use a vocal amplitude display to help you do gentle onsets. Show how vocal frequency is a surrogate for vocal fold tension, i.e., relaxed vocal folds produce a low vocal frequency, and tense vocal folds produce a high vocal frequency.
- Find out if any of your relatives stutter. Draw a family tree showing your relationship to the person. Present evidence that stuttering has a genetic cause, and evidence that stuttering is not genetic.
- Find a speech clinic that has a speech biofeedback system. Write a report about what the biofeedback system does.
- Repeat Wendell Johnson's 1937 studies of adaptation and anticipation. These studies are described in A Handbook on Stuttering, by Oliver Bloodstein.

37.2 History

- Write a report on the history of stuttering therapy, using Stuttering: The Search for a Cause and Cure by Oliver Bloodstein.
- Write a report about a famous person who stutters[2].

37.3 Community

- Interview a speech pathologist about the cause of and treatments for stuttering. Describe the techniques and goals of two therapies. Ask your school district if they have a speech pathologist specializing in stuttering, or call the Stuttering Foundation of America at (800) 992-9392 to find a stuttering specialist.
- Help your school's speech pathologist organize a "Youth Day," with the help of Friends Who Stutter[3] or the National Stuttering Association[4]. This is a weekend workshop in which a childhood stuttering specialist trains school speech-language pathologists and parents to treat stuttering. At the same time, the children play speech therapy games and meet each other.
- Observe a speech pathologist treating a preschool child who stutters. Write a report about this, answering these questions: What games did the speech pathologist play with the child? What was the purpose of the game? What did the speech pathologist talk about with the child's parents?

2 Chapter 30.0.1 on page 125
3 http://www.friendswhostutter.org/
4 http://www.nsastutter.org/

- Interview a successful adult who stutters. This could be an accountant, a lawyer, or a teacher. You can find such a person by calling a local stuttering support group[5]. Ask how stuttering affected the person's childhood and high school years; adult life; choice of career; and marriage or relationships. What stuttering therapy has the person had? How severely did the person stutter when he or she was younger? Are there situations in which he or she stutters more, or stutters less? Are there are speaking situations he or she fears or avoids because of stuttering?
- Does another student have a disability? Compare yourself to a student with a physical disability, and to a student with a non-physical disability (e.g., mental, emotional, or learning disability). See The Disability Hierarchy[6].

37.3.1 References

1. [Costello1993]Costello-Ingham, J. *Journal of Fluency Disorders*, *18*, 1993, page 30.
2. [Kalinowski1996]Kalinowski, J. *European Journal of Disorders of Communication*, *31*, 1996, page 259.

Category:Speech-Language Pathology[7]

5 http://www.nsastutter.org/content/index.php?catid=101
6 Chapter 30.0.1 on page 124
7 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

38 Acting and Theater

38.1 Audience Reaction Video

After performing in a play I interviewed audience members asking what they thought about seeing an actor who stutters.--Thomas David Kehoe[1] 01:33, 28 March 2006 (UTC)

Watch the video.[2]

38.1.1 First Interview

WOMAN: I thought you did a great job. And at first I didn't know if it was part of the acting or not. I even asked Richard if it was part of it or not. I couldn't even tell if you were acting or if it was real. But I thought you did a great job and I didn't think it made it any worse than it would have been if you didn't stutter. I thought it was great.

38.1.2 Second Interview

WOMAN: I thought you were excellent. I met you before the show so I already knew. But it was like part of the act. I didn't know that was an anti-stutter device. I just thought that was part of your costume. I thought you were great.

Third Interview

TDK: What did you think of my stuttering?

MAN: It just seemed natural, like a part of who you were. And also there were times when you used it well.

TDK: If you heard that another play had an actor who stuttered in it, would that make you less likely to go see the play, or would you not care?

FAST-TALKING WOMAN: It gives the opportunity to slow down and actually the words that are being said. Otherwise if they're flying by too fast then it just kinda does just that, you're not even able to catch it as it rides by. But if you slow down and catch, you syllabalize it goes then that would seem to me to be a good thing. Just kinda slowing down the gears a little bit, snapping them back.

1 http://en.wikibooks.org/wiki/User%3ATdkehoe
2 http://www.casafuturatech.com/Books/NoMiracleCures/GardenInterviews.mov

Fourth Interview

TDK: What did you think about me stuttering?

SETH'S MOM: Well, what I first thought that it was part of your act. Then eventually I caught on and I just thought it was great that you were performing and just being who you were and being an actor and making us all comfortable with that. It's not an experience I have every day, communicating with someone that has any kind of speech difficulties. And then the part where you said, "No, I just stutter," after the crushed nut episode, that was just a real, it just helped us all, kind of, yeah, it was a joke, and broke the ice, along with everything else being, talk about rawness of human emotions and kind of everything laid open, it was very helpful, and once again remembering that we're all human and we all have things to contribute and we all have things we don't like about us.

SETH DREAMSEEKER WAXING MOON BRAUN: I felt like it's engaging to watch you perform because what's engaging about a performer is presence, and you're ability to stay present with the dynamic of your character, even though you're stuttering. It's very interesting, it's like, if you're that committed as a performer, to move through what might be difficult, it engages me.

TDK: What did you think of my electronic anti-stuttering device? Was it weird or distracting that I was using this?

SETH DREAMSEEKER WAXING MOON BRAUN: Well, since I know you, David, I thought, OK, I wonder if that's an anti-stuttering device? But I didn't even think about that until I'd seen it like ten minutes into the show. It was just like, maybe this is character. I really that it was part of a shift of character because you used it really well.

TDK: There's a group of teenagers who stutter in New York City who've formed an acting company. Is there anything you'd like to tell them?

SETH DREAMSEEKER WAXING MOON BRAUN: Hell yeah! I support you in training as young warrior artists.

Fifth Interview

TDK: What did you think about me stuttering?

DUNE: I just saw these different characters on stage, and it was just a quality of that character. Every different, completely different character. It took on a different quality, just like any other attribute that a person would have.

TDK: A group of teenagers who stutter in New York City have formed an acting company. Is there anything you'd like to say to them?

DUNE: Right on! Just keep doing what you're doing. I mean, I think that watching the performance, people that are trying out these different aspects of themselves, I want to do it. So I think that anyone that's doing it, go for it. It must be really a freeing thing, and takes a lot of courage.

Sixth Interview

TDK: Nir Banai was also in this play. What was it like working with a person who stuttered?

NIR BANAI: It was great. It was very inspiring to see you do such a performance with stuttering and having so much confidence to do it. It was really impressive. It was so impressive that you even used it as a joke in one of the skits. I was really impressed that you feel so comfortable with it.

Seventh Interview

TDK: If you heard that another actor in another play stuttered, would that make you less likely to go to the play?

MAN: Well, no, I don't think so. I mean, no. Definitely not.

TDK: There's a group of teenagers who stutter in New York who have formed an acting company. Is there anything you'd like to say to them?

MAN: Well, um, so, I think if they are looking for some inspiration then, um, well, if I was them I would have found that tonight.

Eighth Interview

TDK: What did you think about me stuttering?

GIGGLING WOMAN: I thought it was beautiful. You did a great job, I thought it was very real. Yeah, I was convinced–

TDK: Well, it was real, I do stutter!

GIGGLING WOMAN: You do stutter? No, you don't really stutter, do you?

TDK: Amazingly real, isn't it?

GIGGLING WOMAN: It was. It was very very real.

TDK: Wow. Great. I achieved that.

GIGGLING WOMAN: Yeah.

TDK: What did you think of the electronic anti-stuttering device I was wearing?

GIGGLING WOMAN: Oh this thing? I thought that was super cool. I did, I thought it was great.

Ninth Interview

TDK: What did you think of me stuttering?

WOMAN: It was beautiful. For real. I thought, I was much more, like, into the creativity of the play and thought that you guys pulled off a really beautiful creation, that you guys made.

TDK: You weren't wishing they had someone who wasn't stuttering?

WOMAN: No way, man. No way. I thought it was beautiful. It was great. You were great. I was very impressed.

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3 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

39 Spouses of People Who Stutter

40 Stuttering in the Military

41 Advice for Listeners

A brochure *How to React When Speaking with Someone Who Stutters* from the Stuttering Foundation of America lets the readers know how to react when interacting with someone who stutters and how to put them at ease. Download the PDF from their web site at stutteringhelp.org[1]

Category:Speech-Language Pathology[2]

1 http://www.stutteringhelp.org
2 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

42 Stuttering in Movies and Television

43 My Life in Stuttering

How has stuttering affected your life? What setbacks and frustrations have you had? Has stuttering given you any positive experiences?

To contribute to this page, first log in. Type your contribution, then sign it with two dashes and four tildes --~~~~. Then on a new line type <hr>. That puts a line (horizontal rule) between different people's contributions.

And please read Speech-Language Pathology/Stuttering/How to Participate in this Wikibook[1] before adding material.

What does it mean to be a stutterer? by Matt Goodman What does it mean to be a stutterer? Can't talk, can't speak, and can't communicate. I go though more pain than you will ever know. My life has been a hard one, filled with pain, and sorrow, and disgust. My voice can be changed to British, to Scottish, ... to Texan, ... to sometimes a New Yorker, ... and yet I cannot speak. But what is normal? Is it not being able to speak, being thought of as a freak, not being able to communicate your ideas. Is that normal? Maybe not for you, but it is for me. I am a stutterer now and forever, one of the few, the proud, the ridiculed, the Stutterer! I have been a stutterer for 14 years now, and it has not been easy for me. I have gone though the pain of childhood. Elementary school was terrible. Kids make fun of you, just because they do not understand you. Junior High was worse, The teens made fun of you because it was accepted, as normal. I survived, but why? Why me? Why me, to suffer for all these years! Just because I was born with this? I know the question all stutters are asking! WHY US? Maybe it developed over time, or yet... maybe... it just happened, maybe... we learned it, or better yet... maybe... its just a phase, or maybe... it is Genetics. Oh, yes that's the one, huh. And maybe if there was more knowledge there would be a cure? or better yet a cause. Day and night Day and night, Day and night, 24 to 7 you are fluent. 24 to 7 I am not! I am one of the few, the Proud, and the disgraced. And you are the Majority, the Normal, the fluent. This is my life, my challenge, my dream. Oh, when will this curse, this wretched curse be over. I will survive, now and always, Forever, I will never give up, my fight for fluency, for if I do, ALL IS LOST, but all is not lost, there is hope. There is always hope. That is what it means to be a stutterer.

It means trying not to be afraid of doing things that others take for granted; ordering a meal at a restaurant, booking a reservation over the telephone. It means preparing yourself to appear like a fool every day - but you grow a thick skin: you have no choice - you have to get on with it, but you have a feeling that you are never going to reach your full potential, primarily because other people prevent you from doing so.

By this, I mean the job interview. I have lost count on how many I have had. Sure, some of it is that I'm not quite the right person for the job, but in other cases it is evident that I am

1 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FHow%20to%20Participate%20in%20this%20Wikibook

the subject of other peoples misconceptions. I now tell people that I have a stutter to try to make them feel more comfortable, but you still see their wringing hands and stressed eyes, even though you are a lot less embarassed than they are. "Was my speech an issue when it came to choosing the right candidate?" I asked once when seeking interview feedback. The reply was, "it was a concern for one of the members on the panel". I was told that the company had a profit to make. This implied that if I was employed I would have reduced their profitability. Of course, I raised this with the personnel department, but by then they had figured out their excuses.

For me, age brings it's benefits. The older that I get, the more I am happier in my own skin, the more fluent I become. My early teens were the worst - all that angst and stress. If only I knew then that it would get better. When I was younger I could barely speak at all. I wasn't teased so much, it was the situations that one had to endure. Now, a whole week can pass without realising that I speak in a clumsy way.

Although I hate giving presentations and know I freak out the audience, I try to go ahead and do it anyway (although I don't actively seek out these situations). I try to remember that whatever doesn't will you makes you stronger. Most people are accepting, but there are some who give you a wide birth, not knowing how to deal with you or what to say to you. I want to tell these people, "just be normal... after all, in every other way, I am as normal as everybody else".

I've participated in two different periods of therapy when I was young. I enjoyed the first, and liked the therapist and was interested by the whole experience, but then I moved home and went into remission. My second session was as a teenager. The therapist saw me as a stutter rather than a person who has had the stuffing knocked out of them what feels like a million times. The whole person needs to be considered - how they feel about themselves, and what they think others think about themselves too.

It's never going to go away, but I have already achieved more than I thought I would achieve, yet I still have a desire to do more with my life. You get reminded of who you are from time to time, when you put yourself in difficult situations and get knocked back, but I try to think that this isn't your fault.

You have to be 'superhuman' to move forward. You have something that most other people don't have. I take solace in the fact that I am undeniably special - I am gifted with a unique way of experiencing life.

Here are my words of advice to stutterers - do not give up. There is hope.

I am 56 years old and have been a stutterer all my life and know first hand how embarrassing and debilitating it can be. It has severely limited my social life and has prevented me from making female friends. We all know the horrifying situations, speaking to strangers, answering the phone, ordering in a restaurant, public speaking or speaking to someone in authority.

As a child, I remember being taunted by my uncle and cousins. In hindsight, I believe that relatives and peers have exacerbated the problem which may not have occurred if less attention was given to it.

I recall a classmate in high school who was a severe stutterer. When he was required to answer a question in the classroom he would block completely, and yet, outside in the playground he would be yelling for the football at the top of his lungs.

Some of my most fearful stuttering experiences occurred in my teenage years. In high school they tried to introduce us to public speaking. We had to make oral presentations in front of the class. On another occasion, for five straight days each student had to read passages of scripture in front of about twenty priests gathered for lunch at the local seminary.

In my first year at university I realized that I could benefit from professional intervention but could not afford it as a student. In the end I never received any direct treatment. The turning point for me came in my university years. I started to get involved in committees. I became president of a student club. I started to gain confidence speaking in front of the class on subject matter of which I was knowledgeable. It was much easier for me to speak out when I had the floor. But it was never easy in speak in random conversation within a group.

What was my most embarrassing moment as an adult? As the president of a local community club, I had to make a short presentation to city council. Even though I was well prepared with script in hand, the words just did not want to flow. I must have sounded like an incompetent fool. Fortunately my vice president was with me and he did an excellent job of delivering what I had failed to do.

The following is simply my own experience and analysis and does not represent any formal academic thesis on the subject. I characterize my experiences and observations of stuttering into three stages, repetition, blocking and facial contortions. Repetition appears at an early age and is common in children. It is like trying to start a car engine that just doesn't want to go. Or it is like having "to make a running start" in anticipation of getting over the hump or block. Blocking is the real manifestation of stuttering. Repetition is a learned habit of attempting to overcome the block.

Facial contortion represents the more severe manifestation of blocking where the facial muscles, through a lifetime of undesirable training and exercise just would not let go of old habits and the words just would not come out. Forcing the words out while blocking will only reinforce the problem. Sometimes severe blocking is accompanied by slapping the hand on the legs or thighs, or by foot stamping.

Some consequences of stuttering are avoiding certain situations such as answering the phone or talking to people. You tend not to participate in group discussions or to provide verbal answers in class. Word substitution becomes common. When you anticipate that you will stutter on a certain word, you substitute it with another word sometimes resulting in lesser impact or conveying the wrong message. Common stuttering words are "but" and "and". I used to think that certain consonants such as "b" or "p" cause me the most problems but I believe that this is no longer true. Multi-syllabic or difficult words such as "meteorology" or "epidemiology" are examples of stumbling blocks. The strangest of them all is I stutter saying my own name. To this day I still do. I took a year of learning Spanish. For whatever reasons, my stuttering increased when speaking a different language.

Stuttering is not a neurological disorder. It is a developmental disorder. It is an involuntary habit trained and exercised since early childhood. If you began walking with a limp you would end up walking with a limp. If you walked slumped over you will end up like that. If

you speak ending every sentence with an um or eh you will continue to do so. The difference is stuttering is involuntary and it is very difficult to break out of the rut. You have to literally untrain your muscles in order to break out of the habit. I agree with the statement that "stuttering is what stutterers do trying not to stutter". Speaking is an art form of expression. Just like dancing or playing a musical instrument, it takes years of training and practice to be able to do it automatically and fluently. Ideally, I would like my speech to be automatic and I should not have to be conscious of my efforts. The more I think of my stuttering the more likely I am to stutter. The chapter on Zen in the Art of Stuttering[2] is wonderful reading. Another section that I find very useful is the discussion on autonomous motor learning, Three Stages of Motor Learning[3].

Here is what appears to work for me. First of all, I have a lot of self confidence in what I do. I have high self esteem. I believe that this is very important. You have to believe in yourself and know what your strengths and weaknesses are. Here are the things that I have done in the past. I began by reading aloud privately. I read slowly and quietly at first. I paid attention to my breathing, trying to be slow and controlled. I focussed on articulation and exaggerated the spacing between words. When I became comfortable with this I gradually increased my volume. I pretended that I was in a large room and tried to project my voice as if I were speaking to the person at the back of the room.

In general, I have found that taking a deep breath appears to be the wrong thing to do. I am more likely to block by doing so. Instead, I take a deep breath and exhale slowly. Now while halfway through exhalation, I say the words I want to say. I believe this makes my muscles more relaxed. I certainly want to avoid hyperventilating. If I find myself blocking, I stop. I must not force my way out of a block. I know that doing so continues to exercise the wrong muscles.

Perhaps, what has had the most significant impact is learning to control stress and anxiety. As I grow older I grow mellower. I don't sweat the small stuff and I am more relaxed. For example, I watch my driving habits. I have slowed down to the speed limit. I don't try to beat the red lights and I stop at all stop signs. I try to be courteous and I let the other drivers in. I don't switch lanes just to get ahead. Instead, I slow down for the slower driver in front of me and I give myself lots of space. Overall, I am a much calmer and happier person.

I was 47 when my father died and none of my siblings would give the eulogy at his funeral service, even though I am the youngest of his children. I willingly took myself to the task and I am pleased to say that my delivery was flawless. As an adult, I have served on a club executive, serving as president for one year. I now teach at a major university. Two of my professors were severe stutterers and yet they were able to conduct lectures in front of three hundred students. On another occasion I was emcee at the memorial service for a professor with about 150 people in attendance.

I have four wonderful children. When one of my sons was about three we witnessed incidences of stuttering. Knowing what I have gone through in my life as a stutterer I did not want

2 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FSpeech%20Motor%20Learning%20and%20Control%2FZen%20in%20the%20Art%20of%20Stuttering

3 http://en.wikibooks.org/wiki/Speech-Language%20Pathology%2FStuttering%2FFluency-Shaping%20Therapy%2FMotor%20Learning%20and%20Control%23Three%20Stages%20of%20Motor%20Learning

him to have to do the same. My wife and I discussed this at great length and mutually agreed on our set of strategies.

1. We recognized that some degree of disfluency in children is normal and quite often they outgrow it. 2. We agreed that bringing the child's attention to it or the attention of those around him would do more harm than good. 3. We agreed to model both good speaking and listening habits by speaking slowly and clearly and by listening without interrupting.

Most importantly, we allowed the child to speak without interrupting, giving our full attention with eye-to-eye contact, whether on a one-on-one basis or in a group at the dinner table, for example. Today he is eleven, a bright and confident young man and speaks fluently.

In retrospect, I believe that reading and writing have helped me to overcome my stuttering. As a child and teenager I did very little of both. Being a stutterer caused me to be introverted which resulted in my having poor verbal communication skills. I never did dwell on the thought that I might have poor language skills as well. I am now made aware of this having read "Boys of Few Words" by Adam J. Cox. Another book, "Men are from Mars, Women are from Venus" by John Gray, discusses how men and women can be so different in communication skills.

As a young adult, witnessing the birth of personal computers and desktop publishing, I became the editor of a club newsletter. I have read and written a lot more since then. I now see the importance of developing language skills and how this has helped me. Being introverted did not necessarily mean that I was capable of internalizing all my thoughts and feelings clearly and fluently. I needed to develop my language skills as well.

I have created my personal book of "Writings" for no other reason except for enjoyment. This is not a diary or journal but a collection of thoughts, ideas, theories or personal analyses of anything that comes to mind, usually about religion, philosophy, politics, economics, conservation, etc. I can write a lot more fluently now than ever before. When I speak I have difficulty finding the right words to say. Quite often I know the word I am looking for but it doesn't come to mind quickly enough. Writing has allowed me to improve my sentence construction and words appear to come more quickly and fluently.

The goal as a stutterer is to be able to say the words without having any thoughts of stuttering. As said before, "stuttering is what stutterers do when they are trying not to stutter". Let the sleeping dog lie. I can declare myself to be one hundred percent fluent, despite the fact that I do stumble occasionally. I say this because I am no longer afraid to speak to an audience. I can handle all situations that I was so fearful of in the past. I no longer use word substitution. I know that I can speak fluently. When I speak, the words come more easily and I no longer have to think about stuttering. On the few occasions that it rears its ugly head I revive the techniques to allow me to glide over it and put it aside. My life is so much richer now that I have the confidence to speak in public. (--Charlie2[4] 13:14, 3 February 2007 (UTC))

12 September 2008 - Update I am happy to announce that I have been a very active member of Toastmasters, an internationally renowned organization that promotes building confidence in communication and leadership. My purpose for joining Toastmasters was not to overcome my problems with stuttering but to prepare me for the greater role of becoming an effective

4 http://en.wikibooks.org/wiki/User%3ACharlie2

public speaker. Joining Toastmasters has been a very rewarding and entertaining experience for me. -- Charlie2

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5 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

44 Recommended Books and Periodicals

Fun With Fluency: Direct Therapy with the Young Child, by Patty Walton, MA-SLP, and Mary Wallace, MA-SLP (1998; ISBN 1883315395) is the best book I've read about treating children ages two to seven years old. It's all about direct stuttering therapy[1] (as opposed to the old, ineffective indirect[2] methods. A hierarchical progression of therapy begins with easy, stretchy speech; making direct requests for easy speech; modeling self-corrections; play speech games; contrast easy speech with hard speech; and embracing the speech villains.

Motor Control and Learning: A Behavioral Emphasis, by Richard Schmidt, Tim Lee (2005; ISBN 073604258X) will tell you more about stuttering therapy, especially fluency shaping therapy, than any other book–even though this book never mentions stuttering. This book is about how our brains learn and execute complex motor (muscle) skills. Fluent speech is our most complex motor skill. If the stuttering "experts" were to read this book, stuttering therapy would advance fifty years.

Stuttering: An Integrated Approach to Its Nature and Treatment, by Barry Guitar (1998). This is the best book I've read about stuttering. The first part of the book presents the essentials of stuttering research. The second part of the book differentiates stuttering modification therapy from fluency shaping therapy, and then shows how to integrate the two therapies. The writing is clear and understandable to undergraduate speech-language pathology students or even non-speech-language pathologists.

Smart Moves: Why Learning Is Not All in Your Head, by Carla Hannaford (1995; ISBN 0915556278) is yet another book that isn't about stuttering. This book shows how (and why) to use cross-lateral exercises to enhance learning. When we learn one thing in one area of our brain, and learn something else in another area, sometimes the different areas of the brain fail to communi-cate and we don't seem to have learned. This is clear with learning-disabled children who can learn numbers, learn the words for numbers, and learn pictures of a number of objects (e.g., 7, seven, and seven apples) but fail to connect these concepts. Cross-lateral exercises involve moving your left hand or foot to the right side of your body, and your right hand or foot to the left side of your body (crossing your midline). Such exercises require commu-nication between your brain's left and right hemispheres and seem to enhance learning. Because stutterers have more activity in their right hemispheres during speech, when non-stutterers have more activity in their left hemispheres during speech, cross-lateral exercises might enhance stuttering therapy.

Stuttering: A Life Bound Up In Words, by Marty Jezer (1997). Jezer was a talented and entertaining writer, and author of biographies of Abbie Hoffman, Rachel Carson, and other books. This is Jezer's autobiography, and stuttering affected everything in his life. You

1 Chapter 14.2 on page 52
2 Chapter 14.1 on page 51

learn much about stuttering and especially stuttering therapies, because Jezer went gone through just about every therapy program (and still stuttered).

Knotted Tongues, by Benson Bobrick (1996). Bobrick is a historian, and the bulk of the book is about historical and literary persons who stuttered. These include Moses, Charles I, Lewis Carroll, Henry James, W. Somerset Maugham, Winston Churchill, and Marilyn Monroe. Bobrick also covers the history of stuttering treatments. *Knotted Tongues* is written for non-professionals. The book also has a thirty-page overview of stuttering science, and a twenty-page overview of stuttering therapies.

The *Mary Marony* series of books, by Suzy Kline, portrays a seven-year-old girl who stutters. She is supported by her parents, speech pathologist, and teacher. In Mary Marony Hides Out (1996), Mary's favorite author comes to talk to her school. She is torn between her desire to talk to the author and her fear of speaking in the school assembly. When she gets up the courage to speak, a classmate makes fun of her, and Mary hides in the bathroom. The author stuttered growing up.

The Loop, by Nicholas Evans (1998; ISBN 0440224624) Like Evans' first novel The Horse Whisperer[3], this book is set in Montana. The central characters are a successful rancher and Luke, the rancher's 18-year-old son. Luke stutters, and the father punishes him as if stuttering were a character flaw. The other teenagers ridicule Luke. His speech-language pathologist (who uses stuttering modification therapy) is sincere but ineffective. Luke decides not to go to college because he's afraid to talk. He's happy alone in the mountains, watching his father's cattle. Or so his father thinks. Luke is actually watching a family of wolves. When his father wants to kill the wolves, Luke courageously stands up to his father.

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3 http://www.amazon.com/exec/obidos/redirect?link_code=ur2&tag=softlogic&camp=1789&creative=9325&path=external-search%3Fsearch-type=ss%26keyword=0440222656%26index=books

4 http://en.wikibooks.org/wiki/Category%3ASpeech-Language%20Pathology

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