

Revolutionizing How We Understand & Treat Stuttering

Edition 1: Launching a New Approach

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Introduction

Have you ever asked yourself, "Isn't there someone who has sat down and looked at all the characteristics of stuttering and figured out what's going on?"

"Isn't there some researcher somewhere who has put all of these puzzling pieces together to explain stuttering?"

"Isn't there someone who has come to understand stuttering's nature and figured out a good way to treat it?"

After all, even the lay observer is intrigued by it and has a sense that this enigma is solve-able. You'd think it would be solved by now.

"Why do people not stutter in some situations and stutter significantly in others?"

"Why is it that a person who stutters can block on a word for a few seconds and then the word all of a sudden comes out? What changed?!"

If you have asked these questions or ones similar, then we have something in common. I also asked them a number of years ago and there was seemingly nowhere to turn for satisfactory answers. I had sought out the world's leading experts on the subject, sought treatment for my own stuttering and was disappointed with both the answers and the results. I simply wanted sensible explanations and reasonably effective treatment for stuttering and, had I received it, would have walked away from the world of stuttering and never looked back.

That's not what happened though.

After seeking these answers and receiving various treatments, I was still stuttering and was still mystified by it. Its accompanying struggles had consumed my life for many years up to that point. The fact that I could not find a reasonable remedy to deal with my stuttering lead me through some very challenging times

in life. I decided since stuttering was already consuming my life, why not make use of that.

In my asking the question "Isn't there someone out there who has figured out stuttering and put all the pieces together?" I had received my answer. The answer was "No". So instead of continuing to ask that same question, I started asking a new one. "Why not me?"

In answering this new question, I decided to use my life to serve this cause; to answer these questions. My inability to resolve my stuttering earlier in my life had caused many challenging times. It is part of the human journey I have been on; a human journey that involves significant pain and suffering. While I believe suffering is inherently purposeful, I also hope to transform my own into purpose by giving to this cause. I consider myself humbly in service to those who have asked or one day will ask these same questions. I hope to serve well.

Since dedicating to this path about five years ago, I have graduated cum laude with a degree in speech-language pathology. I have also worked as a developmental therapist treating speech and language delays. Most importantly however, I have stayed passionately curious and deeply motivated to answer the above questions and have been in the trenches doing just that. Fortunately, I believe this process is bearing fruit.

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The initial point of this entire journey to understand stuttering was to get to a place of effective treatment based on a real understanding of the nature of the stuttering condition. Throughout this process I have kept my eye on that ball (treatment). The first part of that process was gaining a sufficient understanding of stuttering as one needs an understanding of a condition to design effective treatment. Up to this point, working to understand stuttering's nature has consumed the vast majority of my work. However, within this

article/guide for the first time, I dive deeply into treatment design as I have reached a sufficient understanding of stuttering's nature to do so.

Within this guide, you will find brief summaries of the above mentioned understanding of stuttering's nature. However, links will also be provided to the full articles explaining this understanding of its nature linearly and in much more detail. It will be part of the treatment to read them so you can operate from a place where you understand why you are doing each aspect of the treatment.

In addition, in laying out the self-treatment guide, it is necessary to provide some background information. Much of that is below. It precedes the actual "Stuttering Self-Treatment Guide" section where "what to do" is laid out.

Also, I worked diligently to ensure this guide is not vague. Instructions on "what to do" will be as explicit and direct as I can make them. Many have written theory on stuttering and offered vague ideas and explanations on what to do to make changes to one's stuttering. This can be frustrating for the person working to "self-treat". To improve upon this, I've worked to make the self-treatment guide as clear and explicit as possible in regards to going about self-treating. I have also worked to communicate the clear understanding of stuttering's nature that the treatment guide is based on.

Problems in Research/Academia & My Differing Approach

Firstly, I want to state that much good comes out of academia and research and you will see in this article I use much of the research. There are many advantages to the academic process and many intelligent people who part-take in it. I admire all in the research community and am truly thankful for their hard work and contributions.

At the same time academia and the research process is not flawless nor is it without significant limitation. This is not news to those within it as researchers have concurred with this view in conversational exchanges we've shared.

In getting to it, however, in current and past research on stuttering there is far too little time spent on synthesizing/combining information we already have. Well-intended researchers end up spending five years on a study which uncovers the most minute new piece of information on stuttering.

Inherent in the above pursuits of new information is a belief that what we need is new information. However, the problem isn't so much a lack of information on stuttering. It is more a problem of a lack of competent synthesis of all the information we have. Many insights about the condition are ready for the drawing if you zoom out a bit and look at the big picture.

In addition, as many researchers concur, much of the academic process is not conducive to the passionate pursuit of answers. The process of a research study can become energy-draining and more about paper pushing and meeting obligations than answering the questions you set out to answer in the first place.

As a result of these problems I have taken a different approach. I have allowed my passionate curiosity to be the unabated director of my pursuit of answers. I have observed my own stuttering and that of many others and trusted my observations and insights. I

have focused on synthesizing the already-existing information. I have believed nothing that I did not understand myself. While I do dive deeply into the tedious details of academic research I also make sure to maintain a level of common sense. Too many seeking answers end up not being able to see the forest for the trees. Also to my benefit, we live in the information age and this has yielded many advantages.

Lastly, before diving in, I'd like to share that I work hard to make my explanations of stuttering clear and linear and work to stay away from convoluted academic jargon. I could write that way but choose not to. I choose to write with simple clarity (which is actually far more difficult) so the reader, no matter their background, can understand it and evaluate its veracity for themselves. You don't need to look for a piece of paper on my wall when evaluating the credibility of my explanations (though I have some) as you can assess the strength and clarity of the logic for yourself. That being said, know that when I am explaining something, it is going somewhere. It may seem indirect at times as I must provide some background information, however, it is not.

An Introduction to the Nature of Stuttering

What if you learned the severity of the movement disorder Parkinson's disease fluctuated with changes in the environment just like stuttering?

What if you learned people with Parkinson's in some circumstances regain virtually normal movement control just like someone who stops stuttering when alone?

What if you learned there were non-speech behaviors that people "stuttered" on? What if golfers froze mid-swing and lost the ability to complete their swing? What if sometimes dart-throwers' arms involuntarily froze under pressure and they could not release the dart? What if these same golfers and dart-throwers could perfectly make these motions in practice but not in competition? Doesn't that sound a lot like stuttering?

What if you learned the amount of "stutter-like" behaviors went on and on affecting many different types of behaviors/movements unrelated to speaking?

What if you learned people stuttered in sign language just like they do in verbal speech?

What if you realized that "speaking out loud" was movement of the body and started getting more interested in how movement works?

What if you learned that unconscious processes started making your own movements before you even knew you wanted to make the movement yourself?

What if you learned speaking was mostly an unconscious process?

What if you learned that blocking and stuttering were also unconscious processes and it was possible to understand what factors go into these unconscious processes?

What if you learned the reward system was deeply interlinked with all movements (motor system), including speech movements? What if you started to understand this link and how it interacts with the environment? What if this link could explain why stuttering fluctuates so much?

What if you learned the fear of stuttering and the shame that comes with it is rooted in an evolutionary fear of death through social ostracism, abandonment, and rejection? What if you learned this was why the anxiety could be so powerful?

What if you started seeing speech as movement and learned that based on evolution all movement is goal oriented and the subconscious must deem a movement "rewarding" and beneficial to support it?

Again, what if you learned speech was movement? What if you learned the subconscious was constantly assessing the environment and preparing what-it-deems-to-be-advantageous movements for that specific environment? What if each possible movement was assigned a projected reward/punishment outcome? What if the subconscious in people who stutter equated speech movements with reward-system "punishment" when the environment contained other people in it? What if it did not prepare nor allow these speech movements as it believed them to result in reward-system "punishment" and even deemed them a threat to survival?

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What if you learned all of the above was true? Would this begin changing your understanding of stuttering? What if you learned we could use all of this "new" information to paint a much clearer picture of the nature of stuttering? What if you learned we could use this new understanding of stuttering to implement more effective treatment?

Well, the above 'questions' are true.

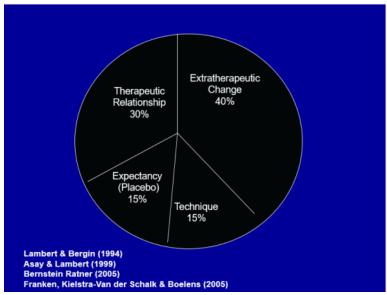
And, yes, we can use their answers to understand stuttering.

And, yes, we can use this new understanding to layout a treatment regimen.

And we not only can, but we are.

Let's begin.

Diving Into Research on Stuttering Treatment



(Zebrowski, 2008)

The above is a pie chart which was included in a presentation at the American Speech-Language-Hearing Association in 2008 by a prominent stuttering research professional from The University of Iowa. (Zebrowski, 2008) The presentation dove into the treatment of stuttering and its effectiveness.

The pie chart represents different factors that contribute to an effective treatment experience across numerous treatment fields and the percentages represent how important each factor is to treatment effectiveness.

Take a moment to look at the chart.

I will dive into each "piece of the pie", however, I want to hone in on "technique" first. "Technique" is considered to be the treatment professional's specific type of treatment. This can range from teaching "voluntary stuttering" to "fluency shaping" to "pull-outs" to "easy onsets" as well as many other treatment

approaches. This "technique" aspect accounts for a mere 15% of treatment effectiveness.

Going even further, there is no variance in effectiveness from technique to technique. Stated differently, there is no difference in treatment outcome based on whether a clinician teaches fluency shaping or easy onsets or any other specific type of treatment. In backing this claim with research, in 2006, a group of researchers conducted a "meta-analysis" of different stuttering treatments. A "meta-analysis" is when researchers gather many already existing research studies on their topic of interest and systematically combine all of the collective data to draw conclusions. Well, as stated, in 2006 researchers performed a meta-analysis looking at the effectiveness of treatment overall as well as comparing the effectiveness of differing treatment approaches stuttering (different techniques). Their study drew an important but clear conclusion. It states, "These data support the claim that intervention for stuttering results in an overall positive effect. Additionally, the data show that no one treatment approach demonstrates significantly greater effects over another treatment approach." (Herder, Howard, Nye & Vanryckeghem, 2006)

It reasonably follows that the simple fact that there was a treatment approach accounts for the 15% of its effectiveness; not the specific type of approach. It didn't matter what the treatment approach was. Across treatments, there was insignificant change in effectiveness based on differences in "technique". It did not matter which technique/treatment was being used. The simple fact that treatment was taking place seems to account for this mere 15% of technique effectiveness; not the specific technique itself.

The same article states, "A more positive treatment outcome is likely to be predicated on the client's hopefulness, but also on the clinician's hope and expectation that the client has the ability

to change, and that they will be able to help the client bring about such change." (Herder, Howard, Nye & Vanryckeghem, 2006)

In going further, let's look at the chart again and dissect it.

40% of treatment effectiveness is attributed to "extratherapeutic change". "Extra-therapeutic change" includes factors such as a person's readiness to change, knowledge base, life experiences, strengths/abilities, etc.

30% of treatment effectiveness is attributed to the "therapeutic relationship". This refers to the quality of relationship between client and treatment professional. Factors within the "therapeutic relationship" that positively contribute to treatment effectiveness include elements like the establishment of an emotional bond (between client and therapist) as well as a shared perspective (between client and therapist) on what the treatment goals should be and what types of treatment methods should be utilized to achieve them.

15% of treatment effectiveness is attributed to expectancy of positive results (placebo). If the client believes the treatment will work, it improves outcomes.

Inferring from the above

Based on the chart, 85% of treatment effectiveness has nothing to do with speaking or mastering a technique. The other 15% cannot tell the difference between techniques.

Within the 85% of what is attributed to treatment effectiveness are elements such as readiness to change, knowledge base, hopes, beliefs, expectations of success, motivation, emotional bonds, shared outlook (between client and clinician) etc.

Addressing Belief, Psychology & The Mind

Many become offended when the topic of psychology is approached when it comes to the origin of stuttering or its treatment. It's as if this somehow implies that people who stutter are abnormally scarred psychologically and that this is the utter root of all things stuttering. However, this is not the case nor is this case being made within this self-treatment guide. Including psychological factors into the understanding of stuttering and its treatment does not automatically imply that people who stutter have had an exceptional amount of psychological pain and that this is the root of their stuttering. However, it is clear if you look at the facts around the condition of stuttering, that it is profoundly affected by psychological factors, at minimum. The fact that talking to one's self vs. talking to someone else can cause wide fluctuations in stuttering severity cannot be ignored. The fact that certain people trigger more stuttering than others cannot be ignored. The fact that stuttering disappears in certain contexts like when one is acting or "playing a character" cannot be ignored. I could continue with examples ad infinitum. Contrary to ignoring these realities, they must be deeply explored and embraced if we are to understand stuttering's nature and treat it effectively. The role of psychology and the mind in stuttering and its treatment is going to get a lot of attention in years to come as it should. This should not be an offensive topic. Psychology and the mind do play a major role in stuttering. Period. Let's not put blinders on to this.

Going Deeper into The Mind & Stuttering

"The belief itself is the technique."

Numerous years ago, before I was on my own mission to understand stuttering, I was being treated by a speech-language pathologist who was also a board certified fluency specialist. For those who don't know, that is the highest certification a person can receive as a stuttering treatment professional. I still hold this person in high regard, however, I was being taught a speech technique by this professional intensively for a couple of weeks. I was bringing up some problems I was running into with the technique and they said to me as an aside, "It is not the technique that works, but your belief in the technique." When they said this, I was very disappointed. I knew this meant it was some "mental trick" that made it work and not the technique itself. To that point, I was under the impression that there was inherent value in this technique and it worked based on reliable physical laws. Never before had it been mentioned that I needed to "believe" in the technique for it to work. Ironically when they said this it devalued my belief in the technique as I then knew it was not the technique itself that worked but it was my "belief in the technique" that made it work. It reasonably follows that "the belief" itself is the technique. We will dive into research below that supports this view as well as supports the need to work on other "psychological" areas as part of stuttering treatment.

It is important to mention at this point that the method I am teaching is not purely psychological. That is just the part I am beginning to address now. A large aspect of the method that will be explained in this guide works directly on speech. It works to strengthen neural networks for automatic/natural speech as well as increase the subconscious linking of reward and speech movements and decrease the subconscious linking of speech movements and pain (shame etc.) in different contexts. You don't have to understand what all that means right now.

In continuing, it turns out this "aside" mentioned to me by the speech pathologist years ago that "it was the belief in the

technique" that worked has some merit and research behind it. We'll dig into that shortly.

First let's look at the placebo and nocebo effects.

Nocebo vs Placebo

Many people have heard of the placebo effect and how it can impact health conditions. Oxford Dictionary (2017) defines the placebo effect as "a beneficial effect, produced by a placebo drug or treatment, that cannot be attributed to the placebo itself, and must therefore be due to the patient's belief in that treatment."

In an example, if a person has high blood pressure and is given a fake medication to treat it but believes the medication works, their blood pressure often goes down, despite their being no physical impact from the fake medication. Their belief in the idea that they are taking a medication that will lower their blood pressure often actually does lower their blood pressure based on belief alone.

On the other hand, there is a term most people are less familiar with which is "the nocebo effect". The nocebo effect is the opposite of the placebo effect. Oxford Dictionary (2017) defines it as, "a detrimental effect on health produced by psychological or psychosomatic factors such as negative expectations of treatment or prognosis."

In an example of the nocebo effect, if a person strongly believes that a treatment for a health condition will not work, this belief has a detrimental effect on how well the treatment works. Studies have been conducted that demonstrate this to be true. In an example, a patient may be given a medication for blood pressure that has been proven effective but because they strongly believe it will not be helpful, the positive effects of this medication are minimized or nullified.

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Let's look at this further and apply it to stuttering. The placebo effect and the nocebo effect have impact on the treatment of conditions that are very physically based. By this, I mean that the placebo effect can impact physical conditions of the internal organs which seemingly have little to do with the mind or psychology. The nocebo effect can do the same. This means that the mind's beliefs can impact seemingly purely physical conditions.

Take that and apply it to a condition which has an abundance of evidence that it is intrinsically tied to the mind and psychology and it is reasonable to infer that the effects of placebo and nocebo would be significantly more powerful on a condition of this type. Stuttering is one such condition that has intrinsic and direct ties to the mind and psychology making placebo and nocebo effects likely more powerful than their effects on "purely physical" conditions.

Also, let's consider this. If a person is indifferent to whether they believe a treatment will work (they don't have a strong opinion on whether it will work or it won't) then the placebo and nocebo effects are likely minimized as belief is not affecting the treatment outcome. However when someone believes a treatment will work, its effectiveness goes up in comparison to the indifferent person. When someone believes that a treatment will not work, its effectiveness goes down compared to an indifferent person. There is an even wider gap in treatment effectiveness when you contrast someone who strongly believes a treatment will work with someone who strongly believes a treatment won't work. To restate, there is a huge gap between a patient who experiences the nocebo effect vs. one who experiences the placebo effect.

What does this mean for changing your stuttering?

An extremely helpful element in making changes in your stutter is believing strongly and deeply that what you are doing is working. It is of high importance. It is actually part of the treatment. The person who stutters entering treatment with a

persistent conviction that the treatment will be very effective is light years more likely to make positive changes than the person who stutters entering treatment with an attitude of "There's no way this will work. Stuttering is untreatable." You must persist in a deep belief that you will make the changes you desire. Make sure you're on the right side of that equation.

Bottom line:

Belief matters. Belief that you can make major changes in your stuttering matters for innumerable reasons. It matters in your daily attitude as you approach making changes. It matters in the moment of interaction when you're thinking about stuttering. It matters every morning when there are things you have to do that day to work on your speech. If you believe your labors will bear no fruit, you won't perform them. You have to believe the plan will result in the desired change you are seeking; otherwise you will not work for it. After all, what's the point in working for nothing? There isn't one. That's why you have to believe. Belief is monumental in this journey. Persistence of belief is as well. Period. This ageless adage is applicable to the journey of "overcoming" stuttering: "Whether you think you can or you think you can't, you're right." Belief can fluctuate. Keep pushing to believe as much and as often as you can. Belief matters.

And lastly but most importantly...

You matter. You have a voice. You have a personality. You have gifts and talents. You have so much potential and so much to offer. You matter. Your journey matters. Your life matters. No matter where your stuttering journey and life journey takes you, I'm rooting for you. I know the deep struggle of stuttering. I know the imprisonment. I know the frustration. I don't know what your life journey is but I'm rooting for you. For what it's worth, I believe your struggle with stuttering is purposeful. Keep pushing and find your path. I'm rooting you on.

Some final research quotes which are highly applicable

"Bruce Wampold and his colleagues have been in the vanguard of such research in the psychology literature and their findings have relevance for our attempts to ascertain which therapies are most effective in treating stuttering. They have found that even drug therapies are more effective when administered by some clinicians then others (Wampold & Brown, 2005; McKay, Imel, & Wampold, 2006). In some studies that have been conducted in clinical psychology and psychiatry, the amount of variance accounted for by the therapy is in fact less than the amount accounted for by the clinician (Wampold, Lichtenberg, & Waehler, 2005). For example, Wampold and Brown found that clinicians who were historically most successful in alleviating patients' symptoms actually obtained better results using a placebo medication than did poorer clinicians who administered an active pharmaceutical agent." (Bloodstein & Ratner, 2008) They continue (2008), "Recent attention has also been paid to the role of the patient's mindset in approaching therapy. Patient readiness for change has been explored in other fields where a treatment is sought for a chronic condition. They suggest after examining the related literature involving behavioral, cognitive and affective change.....that it might be appropriate to match therapies or therapy components to the stage that characterizes the client's current belief set." (Bloodstein & Ratner, 2008)

Important Information Before Diving Into The Self-Treatment Guide

One of the first parts of the treatment regimen is going to intertwine what I call "strengthening automatic/natural speech" with significantly enhancing your understanding of stuttering's nature. In accomplishing both of these tasks simultaneously, you are going to read a handful of my previous articles on the nature "out loud". stuttering (I'll explain "strengthening automatic/natural speech" and how to approach "reading aloud" below labeled "The in the section Self-Treatment Guide") Towards the bottom, under "Stuttering Self-Treatment Guide" you will find the reading list. Do not worry about keeping track of links etc. as the most important articles are placed in the order they should be read there.

While it is of high importance that you read the articles in their entirety, I provide important quotes and/or a very brief synopsis of some of the more important ones below. I worked hard to make my articles easily understandable and follow-able by anyone who reads them. Some of the brief quotes and synopses below leave out important connecting information that is contained in the full articles. There are also parts below that may sound "academic" but they are also illuminated more clearly in the full articles. It is not required that you deeply grasp everything that is stated in the quotes and synopses below. It is more to get your feet wet in regards to the understanding of stuttering's nature I'm explaining. When you read the articles in their entirety you then should and will be able to follow and grasp everything that is explained.

Let's look at some snippets from the more important articles.

Article #1: Stuttering: A Significant Illumination through Human Connection, Abandonment, Social Anxiety, Ostracism, Etc.

Synopsis

Connection, approval and belonging are deep needs of the human as a social animal. The opposite of connection, approval reiection. shame. humiliation and belonging is abandonment. Evolution and survival have shaped the human need for connection and belonging. As a result, a situation which presents the possibility of social rejection, abandonment and/or disapproval is perceived as a threat to one's very survival. Social rejection is as feared as death, because evolutionarily, to be ostracized from the group did equal death. A person must be accepted into groups to survive in the wild. In addition, a human child is helpless to survive on his/her own. They must bond and connect to survive. This fuels the child's fear of abandonment which also equals death. Because lack of acceptance and belonging are perceived as survival needs subconsciously, when these needs are threatened, the subconscious of the human perceives this threat the same way it perceives a predator threatening physical harm or death. The mind, body and nervous system, as a result, react the same way to a threat of social rejection and/or abandonment as they do to a threat of physical death. The response the human system has to these threats has been termed the fight/flight/freeze response. fight/flight/freeze state is an anxiety laden state designed to provide maximum energy to muscles that enable a human to fight or flee from a predator.

The above explains why people often fear public speaking as much as death and why they can enter into powerfully anxious states during these experiences.

The person who stutters often faces a social situation perceiving the possibility of social disapproval and/or rejection. In these situations, the person who stutters enters into the anxiety ridden state of fight/flight/freeze as this threat of social rejection is treated subconsciously as a threat of death.

Speech is movement. It is a fine motor act. It is the contraction and relaxation of muscles.

The fight/flight/freeze response is designed to enable a human to maximize the power and ability of gross motor muscle performance. To achieve this, the body alters its postural readiness, its muscular tension and many aspects of the nervous system. These alterations which occur in the body and nervous system of the person who stutters in a social arena based on entering the fight/flight/freeze state can negatively affect the fine motor ability of speech resulting in increased stuttering (using fine motor muscles like those needed for speech is not of high importance in a life or death scenario).

The subtle and unpowerful movements of the speech muscles are not what the fight/flight/freeze state is designed to enable. Contrarily, the fight/flight/freeze state is designed to maximize powerful muscular groups to empower the human to fight a predator with immense force or flee danger with maximum speed. The many alterations that accompany the fight/flight/freeze state have detrimental effects on the person-who-stutter's ability to initiate and execute low energy, fine motor speech movements, thus exacerbating stuttering symptoms (blocks and repetitions).

All of the above results in significantly increased rates of social anxiety in the person who stutters compared to the general population. Experiences of disapproval, rejection and/or abandonment due to stuttering can be considered traumas and when the person who stutters re-enters social arenas, past memories of "trauma" are triggered and their entrance into the fight/flight/freeze state repeats and reinforced. "Unsuccessful" interactions where the person who stutters feels disconnected or rejected lead to a shame state following interaction. These shame and anxiety states are usually deeply ingrained into the subconscious. The person who stutters often knows consciously they should not be anxious or ashamed.

Interaction is a fundamental part of functioning in society, yet it often provokes fight/flight/freeze reactions in the person who stutters. A highly interactive day for a person who stutters with social anxieties, can be likened emotionally to a day in the wild with a high number of near death encounters. Repeated exposure to this has a cumulative effect over time. It often leads to exhaustion, frustration, and other unpleasant emotions. It can also lead to avoidance of interaction. This results in people who stutter falling far short of meeting their needs for human connection, which can lead to isolation, loneliness and other unpleasant emotions.

Article #2: Stuttering Revealed as Disorder of Movement & Reward

Synopsis

Processes that enable human movement operate below the level of conscious awareness. As speech is movement, these unconscious processes are what support, enable, and create both fluent speech as well as "blocked/"stuttered" speaking attempts. Underlying all human movement, including speech movement, is an unconsciously perceived motive to perform the movement(s). Determining this motive is an unconscious calculation of each movement's expected reward/punishment outcome. For movements to be prepared and supported, their unconsciously projected outcome must be deemed beneficial (rewarding). If a movement is deemed likely "painful", "punishing", or a significant threat to survival, the unconscious motivation necessary to perform the movement will not be provided. As humans are social animals, ostracism, rejection, and/or abandonment are unconsciously perceived as threats to survival. In people who stutter, the unconscious processes that underlie movement determine speech movements in certain environments to likely be painful and/or a threat to survival. As a result they are not supported nor prepared. The result is an impotent attempt to summon speech movements by the conscious mind (as the person who stutters consciously desires to speak) which results in blocking and stuttering behaviors as speech movement must be supported by unconscious These unconscious processes factor in the environment and the calculations change from moment to moment based on environmental changes etc. Treatment for stuttering should focus on changing the unconscious perception/projection of expected pain (shame, ostracism) linked with speech movements in problematic environments (often ones with other people in it). The treatments should target the removal of the unconscious expectation of pain (shame, ostracism). Anxiety/fear is an indicator of this expectation of pain. Many have hypothesized on the role of fear

in stuttering and there is one. However, the more important treatment goal should be removing the unconscious expectation (not the anxiety itself) linked with movements. Fortunately for treatment prognosis, these processes/projections unconscious are receptive alteration. In illuminating the above, the article discusses similarities between Parkinson's disease and stuttering which includes a phenomenon of Parkinson's known as kinesia paradoxa. Kinesia paradoxa is the term describing dramatic alterations in a person-with-Parkinson's ability to move based on environmental changes. At the root of these changes are alterations in unconscious motivation as discussed above. This is a very brief introduction and these processes are illuminated in clearer language in the full article.

Excerpt #1

Speech is movement

Speech is a complex task involving the formulation of language. However, the physical performance of speech is movement. When a person "speaks out loud", movements of various parts of the person's body are required. The speaker must move their lips, tongue, and jaw which is nothing more than the contraction and relaxation of muscles. The speaker must move muscles associated with the inhalation and exhalation of the lungs. They must move muscles that enable vibration of the vocal folds. The important point here is speech is movement. When a person speaks out loud, they must move their bodies. lt is а motor

Stuttering presents as an inability to perform speech movements as desired.

The observable symptom of stuttering is the inability of the person who stutters to make the desired speech movements. The person who stutters attempts to "say something out loud" (speech movements) and the appropriate

movements do not occur. There can be a complete "block" (no movement) in their speech or there can be repetitions (sound/syllable/word/phrase) or even non-speech-related movements (secondary behaviors). In any case, the speech movements the person who stutters is attempting to make are not happening.

Excerpt #2

Speech is an automatic ability performed below the level of awareness.

We've all heard the saying, "It's like riding a bike." What that saying implies is you are just able to hop on the bike and ride it. However, how is this possible? If you think about the complexity of this task, it seems like a lot. You have to coordinate a significant amount of muscles as well as balance etc.

So, how is this possible?

It's possible because the unconscious mind is doing all the required tasks below the level of conscious awareness. Riding a bike is an example of what I call an "automatic ability". In academia, the term used for the automation of a process such as riding a bike is automaticity.

How it works is, after learning and mastering a motor/movement skill (riding a bike, playing piano, choreographed dancing), it becomes automatic. It no longer takes a significant amount of attention to do. The person is just able to do it. For example, if I go to ride a bike, I do not get on the bike and focus on contracting each leg muscle that is needed etc. I just hop on the bike and ride it. My unconscious knows how to do all of the required muscular contractions and balancing etc. without my conscious control. This is an "automatic ability".

Speaking is also an automatic ability. When a person who does not stutter speaks, they are not focusing on contracting and relaxing the speech muscles. They "just know" how to do it and

they "just do it". This is because it is an automatic ability. I mentioned above the number of muscles involved in speaking out loud. It involves the lips, tongue, jaw, lungs, larynx, etc. All these muscles are controlled at once and in coordination to speak out loud. The complexity of this task is far too great for the conscious mind to handle. It is not possible for the conscious mind to focus on moving the tongue perfectly, the lips perfectly, the lungs, the larynx, etc. It is far too great a task. Therefore, any time a person speaks, unconscious processes have a large hand in performing the speech movements. There is no other way it can happen.

Bottom line: The movements required for speaking are automated. Speaking out loud is an automatic ability performed by the unconscious mind. The speaker does partly select and edit the meaning and message they choose to convey, but the speaking movements required to "speak out loud" are automatic and are performed below the level of the conscious mind."

Article #3: Stuttering May Not Be Speech Related

Excerpt #1

In looking at the common denominators/similarities between stuttering and these other stutter-like behaviors (the yips, dartitis) it becomes fairly clear that neither the physical apparatus nor its neurological "wiring" are the root of the problem. In baseball pitching, the freezing/jerking/loss-ofcontrol happens in the arm and hand. In speaking, freezing/jerking/loss-of-control happens speaking in the apparatus. With football kickers, the freezing/jerking/loss-ofcontrol happens in the leg, ankle, and foot. So, as we can see, the common denominator is not the part of the body. This points strongly towards the fact that what is causing this freezing/jerking/loss-of-control does not reside in the part of the body affected.

So if the problem is not in the physical apparatus affected, where could it be?

Well, what underlies each of these behaviors is the human motor system in general. What we are observing in these stutter-like behaviors or "yips" is a phenomenon of the motor system; not of any specific behavior nor physical body part. Stutter-like behaviors can manifest in any part of the physical body where fine motor learned skills are possible. It just so happens as speech is a skill learned by everyone, that stuttering is by far the most common manifestation of this phenomenon of the motor system.

The required conditions for developing stutter-like behaviors are, for one; it is a learned movement skill. Two; there is pressure on the individual performing the movement skill to do it right and well. Three; upon attempting or completing the movement skill, there will be feedback, either positive or negative, instantly. This feedback provides a reward or punishment for the person who performed the movement skill. Four; because the performance of the movements can bring about punishment or reward, there

is often focus on performing it well, as the person desires achieving the "reward" and not the "punishment". Five; the uncertainty of the outcome (reward or punishment) for performing the movement often creates an anticipatory anxiety.

Excerpt #2

Throughout this post, a case has been made that stuttering's nature is not rooted in speech nor the speech mechanism at all. However, its origins are rooted in the motor system in general. This is based on the notion that there are many other "conditions" that are nearly identical to stuttering that affect various different parts of the body (arms, legs, etc.).

In further examining the nature of the motor system there is strong evidence that elements like fear and other emotions can be significant influences on motor performance. Better yet these elements can at times, directly control motor performance (movements) or inhibit it.

...

Experiencing a speech block or a stutter is something the person who stutters feels detached from. It feels as though they are not in control. It feels as if they are not the ones bringing on the block. It feels as though an element outside of their control is causing their speech block/stutter.

In explaining this, I believe there is a subconscious formula that determines when an individual blocks and when an individual does not block.

In making this information practical and to give the person who stutters some level of control, we need to begin to affect some of these outside factors that contribute to blocks. We need to impact the elements of the subconscious formula.

I am going to list a few of the factors I believe affect whether a block/stutter occurs or not. I believe that based on the combination of these factors and more, the subconscious will determine whether it should block speech flow or enable it. Here are a few factors:

- 1. Level of fear/anxiety
- 2. What the attention is focused on
- How mandatory one believes it is that they speak well and do not stutter
- 4. How aroused/excited/anxious one's body is
- 5. What the underlying beliefs about stuttering are

As stated, in making this practical, what one would do to begin improving fluency is working to mold each one of the elements towards fluency. Molding each one of the elements towards fluency will make it more likely that the subconscious formula for blocking will determine it should allow speech flow instead of block it. Here are some examples on how one might go about molding the factors above which correspond to their numbers. Some of the below strategies would need to be practiced consistently over time to have a measurable effect on fluency.

- 1. The less fear the better. There are numerous strategies to lower fear. Daily meditation is a good way to start. Relaxation techniques are also helpful. You can reframe how you see interaction. Instead of "oh my gosh I'm going to stutter and this is going to be a disaster", you can start inserting thoughts like, "well, let's go for it! I'm going to talk to this person. Big deal if my lips don't move immediately. I can't believe I stress over that." Those are a few ways off the top of my head to begin moving the needle.
- You want your attention focused on stuttering as little as possible. The mind often creates what it thinks about. It's actually best if the attention is not focused on the mechanics of speaking at all. It is also very good to

- focus on all positive things. Focus on the message you are trying to deliver. Focus on how easy speech is. Focus on a good memory. Focusing on positive things will increase the odds of fluency.
- 3. The less you believe it is utterly mandatory that you speak perfectly, the better. Think thoughts like, "mistakes are beautiful", "who cares if I stumble", "I've stuttered before and I'm still here standing", or "the world actually will go on if I stutter some".
- 4. Calming the physical body is also good. The more relaxed the body is all around, the better. This doesn't mean you have to be a zombie who never gets excited. It's a general rule. Check in with the body. Release tensions in it when you check in. Take deep breaths (I know many PWS hate to hear that but it can have an effect over time). Do progressive muscle relaxations. Keep the body tension free. There is something called the vagus nerve that monitors all the systems in the body and reports it back to the brain. This information is likely used in the "stuttering or not subconscious formula".
- 5. The more positive your beliefs are about speech and stuttering, the better. It's better to believe you will be able to make improvements on your speech than to think you are forever at the mercy of stuttering. It's better to believe you are a good communicator than to think you aren't. It's better to believe you will connect with people than to think stuttering will be an obstacle. The more positive the beliefs the better. I'll also say that the mind is good at believing lies. Even if you are not an excellent communicator it is good to believe you are, and consistent thoughts have a way of becoming realities.

There are more factors that likely contribute to the subconscious formula that determines whether one will have a speech block or will have fluency. Working on the above elements and more over time consistently will likely yield results in fluency improvement

as well as in the reduction of anxiety. Based on this the stuttering cycle can begin snowballing backwards.

Article #4: Unraveling the Stuttering Enigma: The Role of Time & Control

Excerpt #1

Let me talk a little about the skill of speaking. Again, for most people (people who do not stutter), speaking is an automatic ability that they are able to do with minimal effort. They just know how to do it and they just do it.

To demonstrate the nature of an automatic ability to yourself, take out a pen and piece of paper. We are going to use the mastered skill/automatic ability of writing in this example. Write three sentences in your native language and observe the movements of your hand. Observe how you write each letter properly without thinking about how to make the movements; without dedicating a lot of attention to properly controlling the movements. I find it kind of miraculous. We are just able to do it. We know how to do it and we just do it. We have mastered this skill and therefore we can make these movements on automatic. To me it is almost ghostly when I observe myself writing in that I am not consciously controlling my hand but it is perfectly executing the proper movements to write exactly what I intend to write.

SIDENOTE: Imagine if you were watching somebody write, and all of a sudden they started writing the first letter of a word over and over. You could tell they were struggling and embarrassed. They experienced a block in between the writing of these letters and stopped writing. Then after about five first letter repetitions they wrote the whole word they were intending and continued on to the next word. A few words later, the same thing happened. This is fairly analogous to what happens with speech and stuttering.

Excerpt #2

Time's relationship with speaking

The skill of speaking is a profound form of self-expression. We are quickly able to express our thoughts, ideas, dreams and personality through speech. What we express through speaking manifests and is heard by our listeners in real time. In other words, as we execute the skill of speaking (moving our articulators (lips, tongue etc.), vibrating vocal folds, breathing etc.) we are heard, evaluated and judged based on what we say and how we say it immediately. Our listeners react to what we say very shortly after we say it. The skill of speaking is used for real time interactions. Therefore, at the time we speak we immediately get feedback from our listeners about what we expressed and how we expressed it. This feedback can be good or bad. If we tell a joke and everybody laughs we are pleased with the immediate feedback we have received. We feel good about the interaction. If we say something inappropriate, can't carry a conversation or are awkward in how we speak and interact, the feedback is negative. During and after the speaking interaction we likely feel bad or embarrassed. Again this feedback comes virtually instantaneously. Concisely, as we speak in real time, we are judged in real time. With the act of speaking there is time pressure.

Article #5: Stuttering & Automatic Speech: An In-Depth Look at the Unconscious' Role in Stuttering & Speech Movements

Excerpt #1

Speaking is a complex process involving the coordination of fine motor control across a large number of muscles. Some of these include controlling the muscles of the lips, tongue, and jaw; controlling the muscles that enable vocal fold vibration; controlling the muscles that impact breath inhalation and exhalation. When contemplating the complexity of the task of speaking, it reasonably follows that the conscious mind is inadequately equipped to perform the task of speaking. The vast majority of speaking must be performed by the unconscious mind. There is no other way to do it properly.

Excerpt #2

Most would agree that as a result of stuttering/disfluencies, the person who stutters begins placing a significant amount of focus on speech. This focus on speech far exceeds a fluent speaker's level of focus on speech. The person who stutters begins trying to control speech in an effort to "not stutter" or "not block" as a result of past situations where control of speech was lost, which resulted in unpleasant experiences. This begins a cycle that reinforces itself. This cycle increases conscious awareness of speech and increases the desire to control one's speech.

Other Excerpts from various articles:

Excerpt #1

Have you heard of the term "inner speech" or subvocalization? Inner speech is simply when you talk to yourself in your head. It is audible thought in the form of words. As you read this silently, you are hearing yourself perform inner speech. It is the voice in your head that is reading these words. Inner speech is a term that was used by Lev Vygotsky, a Russian psychologist who died in 1934. Others since have viewed

"inner speech" as having an important role in social development as well as in developing language and cognition.

As an influential figure in the field of developmental psychology, Vygotsky made assertions on the process of speech and language development in children. He believed that when children first learn to speak, they verbalize every word that comes to mind. As a result, children do not have inner speech in the early stages of speech development. However, as children develop, in response to social pressures, they begin inhibiting some overt speaking behaviors (speaking out loud) and internalizing them (inner speech). This results in inner speech. This means that every child in the early stages of speech and language development must transition from saving every word out loud to inhibiting words they do not want to say out loud. As most children who stutter begin to stutter early in their speech development, this period of transitioning from saying all speech out loud to inhibiting some speech and saying it internally, takes place around the same timeframe as when most people begin to stutter. As you will see, this inhibiting of "out loud" speech plays into the theory on stuttering I am explaining heavily.

Excerpt #2

Tourette's syndrome is in some ways the opposite of stuttering. While only a fraction of people with Tourette's involuntarily say or shout profanities, it is a part of the disorder. What happens in Tourette's is the neurological system of a person with Tourette's determines that it should perform "inner speech". It is unsuccessful in suppressing inner speech. So, when a person with Tourette's says some version of profanity in their heads (just like everybody else does occasionally), the neurological system determines it should perform this action and say it out loud. While the person with Tourette's is simply saying this profanity as part of their "inner speech", it ends up being said out loud because that's what the neurological system determined it should do. In this way, it is the opposite of stuttering.

Article #6: Illuminating Stuttering: Attention's Role – Treatment Implications

I have included this entire article as getting one's attention off of speech and stuttering is important.

Synopsis: The conscious mind and the unconscious mind are not separate entities but work in unison. The unconscious mind directs most conscious activity. While some control over the human attention is under the direction of the conscious will, it is often unconscious processes that control and direct the attention. As humans are an evolved animal whose valued goals are survival and procreation, the attention is a product of this evolution and is utilized with these goals in mind. Unconscious processes direct the attention to what is deemed most important in the current environment to maximize information gathering in regards to it. What is most important is often a threat of some sort to its goals (survival/procreation). In a person who stutters, the looming threat in speaking situations is stuttering and social rejection. As a result, unconscious processes hyper-focus the attention on speech and stuttering to "monitor the threat." This interferes with the development of the automaticity of speech. Automaticity simply refers to movement skills that have been mastered to the point that conscious attention and manipulation are no longer required. An example of an "automated skill" is riding a bike. Another example is speaking in a fluent speaker. One of the final stages in a skill becoming automated is the removal of the conscious attention from it. However, due to consistent penalties based on social speech acts in the person who stutters, the attention continues to hypermonitor speech in these situations as there is a threat based on its performance. This hinders the person-who-stutter's speaking skill from becoming fully automated. This placement of the attention on speech, as stated, is mostly controlled by unconscious processes outside of the realm of the human will. However, while the unconscious mind has significant power over the conscious mind, the conscious mind can also impact the unconscious mind. This is where there is hope for effective

stuttering intervention. The unconscious mind assumes that if something is not being consciously monitored by the attention, that it is not a threat. If it were a threat the attention would be on it, is its assumption. So, when a person who stutters begins placing their attention completely off of speech and stuttering, the unconscious mind interprets this to mean that speaking is safe and therefore allows automation (fluency). Blocks and stutters are based in an unconscious "belief" that speech acts will result in punishing outcomes. However, when the conscious attention is removed from monitoring speech, the unconscious mind interprets this to mean that speaking is not a threat and therefore allows automation, block free. Based on this, a significant part of stuttering intervention should be attention training off of speech. This is a brief synopsis and is explained in more detail below.

Full Version on Attention & Stuttering:

When a person who stutters enters a speaking situation, their attention often goes directly to speech. There is a possibility of stuttering and the attention hyper-focuses on this to monitor whether stuttering happens or speech flows.

Why?

Sidenote: Human life and existence are deep subjects. I personally see deep purpose in the human journey and am not devaluing this purpose (or lack thereof for those who have different beliefs) by discussing human beings from an evolutionary vantage point below.

So, why does the attention focus so strongly on speech?

To answer this question we need to look at the human organism in its totality. A human being is the result of billions of years of evolution. The valued goals of every species including humans are survival and procreation. The human organism has evolved to value these things at its deepest levels.

As a highly evolved being, the human has both an unconscious mind and a conscious mind. To give a brief definition of each, the unconscious mind is composed of all operations of the human outside of one's conscious awareness and/or one's conscious control. The conscious mind is both what we consciously experience as well as what we consciously control.

The Unconscious Mind Largely Controls the Conscious Mind

Many often separate the conscious mind from the unconscious mind. However, they mostly work in unison and as a team. For the most part, unconscious processes largely direct even the conscious mind. As conscious beings, we passively experience much of our conscious reality as opposed to direct it with our will. We are far more observing passengers of our experiences than we think; as opposed to conscious operators.

As stated above, we are a species that has evolved over billions of years to survive. Self-preservation/staying-alive is what the entirety of our organism has been designed to do.

The attention has resulted from evolution and is not an exception to the above rule. Its purpose lies in survival. One of the attention's key roles is to aid in the human organism's gathering of information to increase its chances of survival. The attention will often be forced to focus on what has been deemed the most important factor in one's environment for one's survival. It becomes focused on this factor to allow for maximum information gathering about it. The sensory organs will often be more directed to it (the eyes will look at it etc.) and one's conscious focus is also on it.

In demonstrating this in a non-stuttering related way, let's look at a situation in the wild. A human is trudging the forest when in the distance this human detects a mountain lion in full sprint towards him/her. This human's attention will immediately become focused on this threat to allow it to gather as much information as possible and formulate the best strategy for survival. This is not an act of the will. Whether this human wants

to focus on this mountain lion or not, the attention is going to focus on it. This is evidence that often unconscious processes outside of the human's conscious control is what is directing the conscious attention.

In demonstrating this relative to stuttering, let's look at how the attention operates in a person who stutters. For people who stutter, when they enter into a speaking situation, the attention is almost always hyper-focused on speech. Is this something that was consciously directed by one's will? No, it isn't. This is demonstrated by the fact that the person who stutters finds it nearly impossible to take the focus off of speech in a speaking situation.

Sidenote: I have asserted in previous posts that attention is one of three elements we have "some" control over. However, in that post I acknowledged this control is limited.

So, in the above example, the person who stutters is nearly powerless over the fact that their attention goes onto their speech. This demonstrates that it is not the conscious mind nor the conscious will that is directing where the attention goes. It is unconscious processes that have controlled the attention. The unconscious mind (processes outside of our control) has placed the conscious attention where it deems it should be and it deems the attention should be on speech.

Automatic Abilities & Speech

I have written extensively on automaticity. Automaticity simply means that we are able to do something without much conscious focus or effort. Riding a bike is an example. When you ride a bike, you just hop on it and start riding. You don't think about contracting each leg muscle and coordinating the movements. You "just do it". That is an automatic ability.

Well, speaking is also an automatic ability for a fluent speaker. They simply say what they want to say without focus or attention on the speech mechanism. They "just talk" like anyone "just rides a bike". The attention and conscious control have been removed from the processes required to perform these automatic abilities. The person "just knows" how to do it and "just does it".

When we are first learning any of these skills, there is direct focus and conscious manipulation of our bodies. However, after we have performed these movements enough times without penalty, our "muscle memory" kicks in and the conscious mind and attention are no longer needed. The unconscious mind knows how to perform these processes and trusts they will be performed without penalty. As a result the unconscious begins to direct the attention elsewhere.

In people who stutter however, because there have been numerous experiences where the speech process has broken down and there was significant penalty for it (social rejection), the unconscious continues to direct the attention to speech in all speaking situations. Because there have been penalties (social punishments) for speech acts, the unconscious mind never removes the attention from this process as it continues to correctly believe its performance is a threat and must be monitored

As the human is an evolved social animal, social acceptance is perceived as a survival need. Speech breaking down in front of another person and receiving a disapproving reaction as a result is perceived as a significant threat. This explains why people often fear public speaking as much as death. I have written extensively on this here.

In continuing, as a result of these continuous penalties for speech acts (social rejection) and breakdowns in speech performance, speaking in the person who stutters never moves up the hierarchy of automatic abilities and the attention remains hyper focused on it.

Despite this, each person who stutters has the ability to speak automatically. It is impossible to say any two word utterance at

an adult level of speech through direct conscious control. If a person who stutters has ever strung together two words, then their ability to automate speech can function properly.

Speaking is a very complex and muscularly coordinated act. To string two words together at an adult speaking level (sounding like an adult) requires automation. There is far too much coordinated muscular contraction involved for the conscious mind to do it. Therefore, people who stutter's ability to automate skills (including speech) is intact and has the ability to function.

The Unconsious Mind Is Affected By What The Conscious Mind is Doing

To demonstrate the above section's title, let's look at an example. If a person is in the comfort of their own home, a way to demonstrate this is by consciously focusing on some different things. If I focus for a few minutes on a bright future and/or a happy past memory, my mood likely lightens. If I spend this same time worrying about a potential future problem or ruminating over a past sad memory, my mood likely gets worse.

In neither of those scenarios did the person directly affect their mood. They did not consciously change their mood. They consciously focused on two different things and this produced different outcomes in mood.

This is an example of how what the conscious mind is doing (focusing on something positive or negative) can affect the unconscious mind (produced different mood states depending on where the focus was).

Well the above was just an example to demonstrate the point that what the conscious mind is doing can affect unconscious processes.

There is a more important example that directly applies to stuttering.

I discussed some around the subject of automatic ability. When a skill has been mastered at a high level, the attention no longer monitors it. This is due to the fact that "muscle memory" has kicked in and any penalty for performing this automated ability is few and far between.

However, if as a movement skill is being mastered (walking, talking, riding a bike) there are continuous penalties (social rejection, etc.) that are consistently delivered upon the performance of this skill, the attention will continue to monitor this skill. This skill will not "graduate" to one of the final stages of automaticity where the attention no longer focuses on it. The attention will continue to monitor this skill as its performance is deemed a threat based on repeated and continuous past experiences that resulted in negative outcomes.

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However, the unconscious can be "tricked". It can be "tricked" into thinking the performance of a skill it usually deems a threat is not one.

If the attention is placed completely off of speech in a person who stutters, the unconscious interprets this to mean that there is no threat in performing the automatic ability of speaking and therefore automates it without interruption (blocks).

To the unconscious mind, a lack of focus on something means it is not a threat.

In applying this directly to stuttering: If a person who stutters can train themselves to focus on something other than speech and stuttering during the speaking process, the unconscious mind will interpret this lack of focus on speech to mean that there is no threat to performing speech and will therefore allow automation without blocks.

This happens to many who stutter occasionally. It has happened to me for very brief occasions. I have had brief moments where I forgot I stuttered for one sentence here and there and therefore did not focus on my speech. As a result speech flowed (it was automatic).

I would assert that the reason devices like the Speech Easy (a device that looks like a like a hearing aid but replays what a person says in an altered and delayed voice) often work only temporarily is because when the person puts the device in their ear and begins getting auditory feedback, their attention is placed on this auditory feedback and not on the speech itself. There is new sensory stimulus that grabs the person's attention. As a result, the unconscious allows block-free automation of speech as the person is not focusing on speech directly. However, as this new stimulus (auditory playback from the Speech Easy) becomes normal, the person who stutters goes back to their normal direct focus of attention on speech and the device "stops working".

The unconscious mind assumes that if something is not being focused on it is not a threat. When a person who stutters is hyper-focused on their speech, which they usually are, the unconscious treats the performance of speaking as a threat and does not allow automation (fluent speech flow) of it.

However, if the person who stutters focuses on something other than speech and stuttering itself, the unconscious will interpret this to mean that speaking is not a threat and therefore can be automated (fluent speech flow). As a result, it is automated (fluent).

A significant portion of stuttering treatment with the goal of increasing fluency should be attention training off of speech itself. Consistent exercise and training can begin to empower the person who stutters to have more control over their attention which will better enable them to focus it off of speech.

That being said, only report on how well the methods worked for you if you were able to stick to it. And again, there is no shame in not having immediate success in sticking to it.

Challenges of Behavior Change

The Stuttering Self-Treatment guide below requires a person to engage in self-treatment activities regularly. As a result, I would like to address some of the challenges of sticking to new behaviors.

Sticking to new behaviors can be challenging. Numerous factors go into how successful a person is. Some of these include: How motivated is the individual? How strongly does the individual believe they will get the desired result if they stick to the new behaviors? How much do they fear the alternative of not sticking to the disciplines? How enjoyable are the new behaviors or how unenjoyable are they? What does their schedule currently look like and is it conducive to the new behaviors? How disciplined are they naturally? I could go on. There are many factors.

I wanted to start by pointing this out because behavior change is largely a science. One's ability to stick to a newly laid out plan depends on many factors outside of human will power. I'm all for the human will and using it to its maximum but the idea that it is all powerful is just not accurate. I have spoken with many individuals who set out to change their stuttering and had a plan in place but were unable to stick to the plan. I am convinced this has happened to many yet some are hesitant to share that they did not stick to the plan for fear of being perceived as "lazy" or "unmotivated". Some even go to the length of seeing themselves this way and chastise their own "laziness". Be kind to yourself. There is far more to it than white knuckling.

This should not be an undiscussed topic. It is very applicable to making changes to and around stuttering. I, as an example, am a motivated person who can usually stick to plans relatively well, yet have had my own struggles with sticking to very rigorous "stuttering plans". Some of these struggles are what have taught me of the limited power of the will. If you embark on implementing the methods below, let figuring out how to allow you to stick to it be an open topic. That being said, some should

be able to do it right off the bat and of course this is what you should aim for. However, if you struggle with sticking to it, which many will, this is not a negative reflection on you at all. I don't see it that way and I don't think you should either. We are human. There is no shame in struggling to stick to an intense regimen of what can be boring work. The goal should be to make the activities inherently rewarding. This way we almost long to do them. However, if we're going to sit down for three hours (or whatever it may be) and do something we don't enjoy, the subconscious will powerfully resist and usually win out in the end. This is human nature. Talk about it. Seek ideas and get creative to enable you to stick to it.

The O'Malley Stuttering Self-Treatment Guide

Introduction

Stuttering is largely a condition involving control or lack thereof. When a person who stutters goes to speak, often the speaking actions they go to make don't happen. The required speech movements are not performed as the person who stutters desires them to be. This can come in the form of involuntary speech repetitions or involuntary silent blocks etc. In the moment of a stutter/block, the person who stutters feels utterly helpless to "get the words out". There is a powerlessness and often a panic/dread/fear-state that can accompany this powerlessness. The instinctual reaction to this is to just continue to try to say the words you desire and keep trying. This is usually not very effective as the words still seem to not cooperate with the ongoing attempt to say them. In the end, the words do usually "come out" at some point. However, to the perception of the person who stutters, the words "came out" somewhat randomly during the course of a continuous attempt to say them. By this I mean it does not appear the person who stutters did anything differently to make the words "come out" at the precise moment they did. The person who stutters has no clear idea as to what made them come out at that time. They seem to have "come out" of their own accord. This leaves the person who stutters no better off the next time "stuttering happens" as they have gained no knowledge of what to do to "get out" of the next stutter/block. This cycle re-occurs, re-enforces, and strengthens and can end up dominating people's lives as speaking and communicating are utterly fundamental and important to so much of life.

Being as it is that control is a central issue in stuttering, what we are first going to look at in this self-treatment guide is what exactly do we have control over.

What Do We Control?

After thinking long and hard and satisfying many rebuttals, I have identified the only three things that we directly control. These are the only three things we have ever directly controlled in the entirety of our lives. They are as follows:

- 1. Attention
- 2. Mental Actions (Thinking)
- 3. Voluntary muscles (Movement)

Now, a few thoughts on this.

Some are likely saying in their minds, "No, I control this and this and this." However, that is not the case. There are many things we can affect or "indirectly control", however, there are only three things we directly control. They are what has been listed above.

Let's look into a couple examples to further illuminate.

Example: There is a cup of water in front of me right now. I just picked it up and took a sip. Some might argue: "You just showed you can control drinking water. That's not on the list of the three things."

If you look closer though, I only directly controlled the three things I listed above. I directly moved the voluntary muscles in my neck and eyes to look at the water. I voluntarily moved my attention and focus onto the water. I initiated the movement of my arm and hand muscles to pick up the water and bring it towards my mouth. I then opened my mouth with voluntary muscles and ingested the water. This entire action where I supposedly controlled "drinking water" is actually many different smaller actions involving direct control over the attention, mental actions (thinking), and the movement of voluntary muscles.

Another example: Let's say I bought flowers for my Mother on Mother's Day. My Mother smiled and felt appreciated and it improved her day. Some might argue, "Look, you have control over what you do in relationships. You made your Mother feel appreciated. You sent her flowers. You controlled all of that. None of that is on the list."

This example can be broken down in the same way as the one above. I directly performed many small actions again. I thought, "I should get her flowers" (mental action). I then performed attentional acts as well as movement acts such as focusing on the road (attention) while moving a steering wheel (voluntary muscles) as I drove to get the flowers. I then performed many more acts of the attention, mental action, and voluntary muscles to bring the flowers to her. The end result was a smile on her face and her feeling good. I performed many voluntary small acts of attention, mental action, and voluntary movement to result in the large act of getting my Mother flowers. I did not directly control getting the flowers nor putting a smile on my Mother's face. Those things happened as a result of the performance of many small directly controlled acts of attention, mental action, and voluntary muscles.

The above is not to engage in philosophy, but to communicate and get you to see that the only things you directly control in a given moment are attention, mental action, and voluntary muscles. That's all you have ever directly controlled.

I am also not saying that on a macro view (a zoomed out view), that you can't control where you go, what you eat, how you treat people, etc. Of course, you have some control over these things. However, if you break it down into what can be directly controlled (not indirectly affected) in any given moment (the only time we ever have access to) it is the three things listed above. That's it, and we're going to use those three things we control in the treatment of stuttering.

The Three Things We Directly Control

Let's dive in a bit to each element we can directly control.

Attention

In a given moment, I can directly control what I do with my attention. Right now, if I want to I can shift my attention. I can do this with my will directly. My attention is focused on writing right now and the words I am writing. However, I just willfully shifted it to a picture on my wall. I just shifted it again to a sensation in my body. I can also shift it to inside my mind. I'm now focusing my attention on a childhood memory. The point is I can directly control the attention with my will. I can tell it where to go directly. What we focus on matters and we can control what we focus our attention on. This gives you some power in any given moment.

Limited control:

While I am listing the only things we control right now, I also want to point out that we have limited control of each one. The attention, as stated, can be directly controlled by our will. However, it also has a nature and will of its own which controls itself when we are not controlling it. The nature of attention is it seeks to be captivated. It moves around and hops from one thing to the next seeking to be fully captivated. When it finds something captivating, it will stop hopping around on its own until it is no longer captivated. Stated differently, attention "has a desire" to find and stay focused on something it deems important and interesting. It will stay true to this nature of its own of seeking captivation unless directly acted on by our will. Even when the attention is captivated on something, it can be willfully moved by the operator (you). We can control the attention if we assert our will to control it. Otherwise, it will be controlled by its own nature in seeking to be captivated.

Mental Action (thinking)

"Mental action" is the term I use for thoughts and thought processes. I chose this term "mental action" as it has different connotations to it than terms like "thoughts" or "thought processes". Mental action implies that the "thinker" has some control over the "mental actions" (thoughts) that occur or are performed. Mental action includes any "thinking act" such as using the imagination; visualizing; recalling a memory; projecting into the future mentally; doing a math problem in one's head; recalling a phone number; etc. Anything you can do with your mind is a "mental action".

Now as we are discussing the three things we can directly control, mental action is, of course, one of them. At any given moment, I can perform the mental action of my choosing through the use of my will. For example, right now, I can visualize a rainbow. I can voluntarily play the sound of a bell in my head. I can recall and bring up the image of my brother's face. I can playback a childhood memory. I can picture a dog. I can turn that dog green now. I can add 7 + 7 + 7 to make 28 (just kidding, 21). I can think about bad things that will happen in the future. I can think about good things that will happen. I can think about past good memories. I can bring up past bad memories. I can think of a person in my life and view them through a lens of something bad they did. I can think up that same person and view them through the lens of many good things they've done. Etc.

There are many mental actions we can perform in any given moment. We can perform these mental actions directly through the use of the will. This gives us some power in any given moment.

Try it. Imagine a rainbow. Now add 9 + 6 + 12. Perform a few mental actions of your choice. Observe your direct control and the ability of your will to directly control this.

Limited Control:

Now, as stated, in a given moment I can perform a mental action of my choosing. However, there are many mental actions that

"happen" without our conscious doing. So, like the attention, our control over mental action is limited. If I am not asserting a direct and conscious effort to control my mental action (thinking), thoughts will still occur. As we all know there is a constant stream of thoughts, words, images, etc. running through our minds all throughout our lives. Of course, not all of these are consciously performed mental actions. However, we can perform the mental action of our choosing in a given moment if we consciously direct our minds to do so. We have this direct control.

Voluntary Muscles (movement)

We have discussed two of the three things we directly control. The third thing we directly control is movement of the body through the voluntary muscles. In a given moment, we can contract and relax voluntary muscles. More simply worded, we can directly control voluntary movements of the body. If I want to lift my hand above my head I can voluntarily do this through a direct act of the will. If I want to close my hand into a fist I can do this in a given moment. If I want to lift my foot off the ground I am able to control this directly and perform this movement. We have the ability to control voluntary muscles directly. I can relax all of my body's muscles. I can make sure I am not contracting muscles and if I notice they are tense (contracted) I can relax them (stop contracting).

We have some direct control over movement and the voluntary muscles of our bodies.

Limited Control:

Like the other two things we control, our control over movement/muscles is also limited. Our speed of movement is limited. Our strength of movement is limited. How well we can move is limited. Not everybody can perform the same movements as Michael Jackson when he moonwalks. They may attempt these movements but are confronted with limitation in

their ability to make these movements. We are limited in how precisely we can move etc.

We do have direct control over voluntary muscles, however the control is limited.

Wrapping up this section

As stuttering is largely a struggle for control, it was important that we dove deeply into what we do control as well as what we don't control. As the introduction mentioned, persistent attempts of just trying over and over to "get the words out" have not been very beneficial in relieving stuttering. An attempt at "getting the words out" is not something we directly control.

Instead of continuing to try to "get the words out" we are going to take a different approach. We are going to alter what we do with the three things we do directly control. We are going to alter what we do with our attention leading up to and during interaction. We are going to alter what we are doing with our mental action leading up to interaction and during interaction. And lastly, we are going to alter what we are doing with our bodies leading up to and during interaction.

One can't directly and consciously get out of a speech block or stutter. What a person can do is consciously operate their attention, their mental action and their bodies in an attempt to "free up" the block. These are the only three things you control, so attempting to directly control something else is futile.

This should give you some hope as this method only asks you to do things that you have direct control over. In the moment of a block; in the moments leading up to interaction; we are going to get good at using the three elements we control to enhance our speech flow and free up blocks. We are going to affect "the unconscious formula for stuttering" (will be covered below) by manipulating our use of the three elements we have direct control over.

That's one part of this self-treatment guide. How you should use these elements we control will be covered in more detail a bit later.

Next, we'll look at what factors cause blocking and stuttering.

The Unconscious Formula For Stuttered Speech & The Unconscious Formula for Fluent Speech

Introduction

As stated earlier, part of this self-treatment guide is going to be reading some of my previous articles to gain a deeper understanding of stuttering's nature. In those articles, stuttering is explained in a linear and clear way. In this section, I am going to explain stuttering more concisely for the sake of brevity. More thorough explanations that connect the dots are within the articles.

Let's begin.

When a person who stutters goes to speak, sometimes the words come out and sometimes they don't (they stutter; have a silent block and/or speech repetitions). When the person who stutters runs into a "speech block" and/or a "stutter", there is no conscious awareness of what is causing it. As stated, sometimes when the person who stutters goes to speak the words flow and sometimes they don't. The person who stutters does not seem to be doing anything differently to cause the differing speech outcomes (fluency or blocking). How it feels to the person who stutters is they do the same thing to speak each time and sometimes they stutter and sometimes they don't. There seems to be nothing they're doing differently that is causing the different results (fluency or blocking).

Obviously, this can be a frustrating experience. One is unable to control a very important human faculty and is mystified as to what is causing it and how to remedy it.

The fact that the person who stutters is not consciously aware of what is causing blocks and what is causing speech flow (fluency) is a clear indication that what is determining whether speech flows or whether speech "blocks" is a process that operates outside of an individual's conscious awareness.

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There is a formula that operates below the level of conscious awareness that determines whether to allow speech to flow or to block it. This unconscious formula that determines whether speech flows or speech blocks is what we are going to be affecting and manipulating in order to create more speech flow.

Diving into the factors that affect the unconscious formula

I have explained in linear detail an understanding of this unconscious formula in my article titled, "Stuttering Revealed as Disorder of Movement & Reward" which is available at the embedded link. I ask that you read and understand that article as part of this self-treatment guide at some point in the near future. However, in the next paragraph I am going to explain the concepts *extremely* briefly. The brevity of the explanation does not connect the dots between different parts of the concepts and the claims made are not backed by a detailed explanation below. The brief nature of the explanation does not allow for diving deeply into the details. As a result, you are not required to deeply understand the concepts by reading the upcoming explanation. However, it can serve as an introduction and a very brief summary so we can move forward with discussing the unconscious formula for stuttering and speech flow and apply it to self-treatment.

Let's begin briefly and concisely explaining some of the concepts.

Speech is movement. It is movement of the body (lips, tongue, jaw, breathing, etc.). When we speak "out loud" we perform speech movements.

There are unconscious processes involved in all human movement including speech movement. We feel as though we "just move", however, much happens beneath the conscious level to enable movement.

One such process which is central in the nature of stuttering, is the unconscious process that evaluates all human movement options and projects a likely "reward/punishment" outcome for each movement. By this, I mean that prior to the performance of any movement, the unconscious makes a prediction of the possible "rewards" that could be reaped from performing the movement as well as the possible "punishment" that could be felt based on performing the given movement.

If the unconscious deems a movement to have a high enough likelihood of an intensely punishing outcome, it will not support the movement and the movement will thus be "blocked". The movement will freeze. These "blocked" movements happen to people in various parts of their body; not just in people who stutter with speaking movements. This is demonstrated in conditions like the yips as well as dartitis and other behaviors. All that is explained in clear linear detail in the article "Stuttering May Not Be Speech Related". It can be found in the embedded link.

On the other hand, if the unconscious determines any movement is highly likely to result in a significant "reward" and has a low likelihood of resulting in a "punishing" outcome it will wholeheartedly support the movement and you will be able to make it easily and rapidly.

The unconscious does not make these calculations without regard to the environment. The environment factors largely into this calculation. Any given movement's possible reward outcome or punishment outcome changes based on the environment one is in. The environment plays a large role in the unconscious formula.

This is why many people who stutter can speak fluently in certain environments but stutter much more in other environments. It is because the reward/punishment prediction for speech movements is different based on different environments. When other people are in the environment (people in a person-whostutter's environment often triggers more stuttering) the unconscious formula predicts a significantly higher chance of a punishing outcome for speech movements. As a result it is less

likely to support the movements and the result is more stuttering. It "freezes"/"blocks" the movements.

The unconsciously predicted "punishment" discussed above comes in the form of pain which looks like shame, rejection, abandonment, and/or ostracism. These are deeply painful emotions often equated to death itself by the unconscious (the unconscious can have a freeze response to perceived threats of death). This is why it so powerfully avoids them and "blocks" movements it believes might result in them. This part of the concept is explained in clear and linear detail in the article, "Stuttering: A Significant Illumination through Human Connection...".

Based on the above, a stuttering experience which results in high levels of shame/rejection/ostracism is a traumatic event. More on that can be found here.

Applying this Directly to Stuttering

The reason speech gets blocked is because an unconscious formula determines that making the speech movements is not in its best interest from an evolutionary/survival perspective. The probability of a deeply punishing outcome (shame, ostracism, rejection which equates to death evolutionarily) is deemed high and therefore the unconscious does not allow the speech movements to take place. It blocks them. It freezes them.

So, what we have to do is convince the unconscious that speech movements are beneficial and not punishing in all environments. Specifically, as many people who stutter only stutter when other people are in their environment, we need to convince the unconscious that speech movements result in reward and not punishment in environments that other people are in. We need to convince the unconscious that all environments that trigger stuttering are actually environments where speaking is rewarding and beneficial; as opposed to having speech be linked with shame and ostracism.

Note: If your stuttering is not more triggered by people in the environment, this method is still applicable. The above was an example.

Final note: After reading the articles I have highlighted above in embedded links, you will see there is quite a compelling case for all statements made. Below, there is a section that lists reading materials and the order in which you should read them so you do not need to keep track of the above articles at this moment.

Automatic/Natural Speech

Another important concept to discuss in regards to the self-treatment guide is automatic/natural speech. I have written extensively on how speech is an automated process. By this, I mean that speaking is something that is unconsciously controlled. If you take a moment to contemplate the complexity of speaking, there is no other conclusion to draw. When a person "speaks out loud", several movements of the person's body have to happen. The speaking individual must precisely move their tongue into proper positions. They must move their lips into proper positions. They must contract and relax their jaw muscles. They must operate the intrinsic muscles of the vocal folds. They must use muscles in their chest to allow them to breathe and produce the proper air-flow for speech. The list goes on.

The point is that the conscious mind is utterly inadequate to track all of those movements and perform all of them in coordination, in order for a person to speak. This shows that speaking has to be an automated and natural process that is performed by the unconscious mind. The conscious mind is fundamentally unequipped to do the job.

Now, for the sake of accuracy, the conscious mind does have a role in the speaking act. It selects what message it would like to convey to the listener and somewhat consciously initiates the speaking process as a whole. However, the mechanics of the speaking movements are controlled by the unconscious mind. There is no other way to do it.

Non-stuttering speakers give zero thought to the mechanics of speech. They are not thinking, "I better activate my vocal cords", or "I better make sure I move my tongue the right way here". That's not the natural way of speaking. The only way to speak (as it is a very complex task) is to let the unconscious control the movements.

If you are able to string three words together ever, your unconscious mind performed the speaking actions and is therefore capable of speaking on "automatic" mode. The conscious mind is incapable of monitoring and controlling so many different muscles at one time. This shows that a person who stutters (if they can ever string a couple words together; ever) has the unconscious ability to perform automated speech movements.

Part of this self-treatment guide is going to be about building and strengthening the neurological network that uses the natural and automatic speaking process.

I am a strong proponent of natural speech. As a result, I do not teach a physical speech technique. I am confident each person who stutters has the ability to string together natural speech without technique. I teach people how to strengthen their naturally automated speech. I also teach people how to get the unconscious to not feel the need to "block" this automated process.

I share more thoughts on technique in the bottom section. If you are attached to a technique or feel strongly that you should have one and use one, I address my thoughts on that in the bottom section.

For more information on automatic/natural speech, I ask that you read these two articles. The first one is titled, "Unraveling the Stuttering Enigma: The Role of Time & Control". The link is embedded in the title. The second one is titled, "Stuttering & Automatic Speech: An In-Depth Look at the Unconscious' Role in Speech Movements & Stuttering". The link is also embedded in the title. You don't have to read those right now. As stated, I list reading material in a section below. You should read the material in that section in the order it is presented. You will be asked to read it aloud which is also part of the self-treatment.

Breaking Down a Stuttering/Blocking Experience

When we go to speak, sometimes we stutter and sometimes we do not. There are numerous factors that cause the unconscious mind to either allow speech to flow or block it.

In the moment of interaction and the moments leading up to an "important" interaction, what often happens within a person who stutters?

Usually, tension builds throughout the body. Muscles tighten, etc. Often, the individual is imagining and thinking about stuttering as well. They are seeing the stuttering scene play out and imagining its pain. Their attention is focused on these negative thoughts. As the interaction gets closer where eventually the person who stutters is engaged in the interaction real-time, all these things intensify. The tightness and stress on the body increases. The mind is more intensely projecting painful scenarios of stuttering and the person who stutters is trying to will these scenarios to not happen. Their attention may scatter onto the listener, then onto their negative thoughts, then onto the stutter they just had etc.

When the interaction is over often times there was some stuttering that happened during it. The person who stutters often self-evaluates their interaction as very negative and enters into a painful shame state. They replay the stuttering in their minds which reinforces the shame. They feel they did not earn approval and instead were likely rejected on some level by their interactive partner based on their speaking. This feeling can linger depending on the severity of the incident.

Now, if you have been stuttering for a while, the above process has likely played out many times. However, this self-treatment guide is designed to minimize these reactions and reverse this cycle as much as possible. It is important this minimization/reversal happens as these factors contribute to the unconscious formula for stuttering. Stated differently, the state of the body during interaction can tip the scales to stuttering or

to speech flow. The state of the mind can tip the scales to stuttering or to speech flow. And lastly, the placement of our attention can tip the scales to stuttering or to speech flow. What we are doing with these three elements all contributes to the unconscious formula that determines whether or not to allow speech flow or to block it. As a result, we must affect these factors to enable more speech flow.

How do we do this?

This treatment guide is divided up into three main sections. One section is the "Preparation for Interaction" section. In this section, there are activities/exercises you will do that prepare you for interaction to lessen some of the reactions we just discussed above. "Preparation for Interaction" also includes strengthening the neural network for automatic/ natural speech. You are going to do exercises that strengthen this. A second section is going to be titled "In-the-Moment Strategies". In-the moment strategies are going to be things you can do in the exact moment of interaction as well as the minutes and seconds leading up to interaction to increase the chances that speech will flow. In the "in-the-moment strategies" section we are going to use the three factors you control that were mentioned above. You are going to exert your will over your attention, mental action and voluntary muscles to the extent possible. Doing the right things with these three faculties can impact whether your unconscious decides to allow speech to flow or block it. And thirdly, we are going to have a section called "Post-Interaction Recovery & Celebration". If you have an interaction that does not go as you would like, we are going to do some things to "recover" from this. You will minimize its impact. On the other hand, a part of this section is celebrating interactions you are happy with. When you have a success, we need to let it resonate and you need to feel the success. These exercises over time will increase the unconscious linking with speech movements and reward as opposed to the linking of speech movements and "punishment"/pain.

The Direct Guide

Part I – Preparation for Interaction

#1 - Building/Strengthening Automatic/Natural Speech

As stated above, if you are able to string two or three words together in succession in any environment ever, then your speaking system is capable of performing "automatic speech". To strengthen this ability and neural network we are going to use it a lot. How?

Read aloud every day alone.

- Find content that you enjoy reading. I advise making it extremely positive content such as self-transformation books etc that build your confidence. As you are reading out loud, enjoy it as much as you can. Reading content that is inspiring can give you reward bumps as the content is uplifting. If you are having a good time and enjoying yourself, your unconscious is linking speaking with enjoyment. Reading aloud is good to do even if you're not enjoying it but even better if you are. As you speak "automatically" you are using the network for automatic speech. When you do this everyday over a long period of time, this network strengthens. In addition you are seeing the whole time how capable of fluent speech you are.
- If you stutter when you read alone that's ok. For the first quarter of the time I want you to read aloud with stuttering and fully accept yourself. Embrace the stutter. No one is watching. Just enjoy observing it. There's absolutely nothing wrong with doing it. Love it. Do your reading aloud and practice complete self-acceptance. Following your "reading while practicing self-acceptance", we are going to have you try some other strategies to get some automatic/natural/fluent speech going.

- Whisper as you read aloud. If whispering allows you to be fluent, then you will do much of your reading aloud under these conditions. Over time begin to slowly incorporate some voice into the whisper.
- Metronome reading and speaking is another good way to induce fluency. If whispering nor reading aloud induces a level of fluency, you are going to read aloud to a metronome. You can alter its speed over time. In addition, as you do this for a while, you can begin turning it off for brief periods and incorporating some "selfpaced" speech segments. Gradually wean off of the metronome. For more on this, there is a write up of a peer-reviewed academic article on the positive effects of daily metronome speech here.
- Also, try speaking instantly. Do not allow your mind to process the words nor think about stuttering before saying them. Just read/talk from the hip.
- One final note: Some stuttering during this process is ok. I personally still have little miniblocks on occasion even when I'm reading aloud. As long as you are experiencing mostly speech flow, that is the point.

Play commentator with the television sound turned off.

You are going to apply the same principles I wrote for reading aloud everyday to playing commentator on the television. The only difference on this is that you are generating your own content. Do not worry about perfect content. Just say what comes to mind. If you struggle with this in the beginning, stick to the reading. Do the above for a minimum of one hour per day.

Tips to make it more fun and easier to do: Play some instrumental music you enjoy in the background. Walk around and read. Read enjoyable stuff. Commentate on shows you enjoy watching.

#2 Focused Meditation

A consistent practice of meditation is going to aid in making the desired changes in your speech for numerous reasons. One of which is you are going to become a better controller of your own attention. As I wrote above, one of the only three things we control is our attention. Practicing focused meditation is largely an act of attention training. For a write up on a peer-reviewed article on the positive effects of attention training on stuttering, go here.

In addition, a practice of mediation is largely about reducing emotional reactivity. It is about observing thoughts without placing a value or a judgment on them. It is about putting space between you and your emotions. It is about putting space between you and your thoughts.

How to practice focused meditation:

It is a simple exercise and there is no doing it right and no doing it wrong. I'm fond of this saying when it comes to meditation: "Trying to meditate is meditating". So as long as you spent some time "trying to meditate" you actually did meditate.

To meditate, this is all you have to do. Find a space where you can be undisturbed. Get into a comfortable position. Begin focusing on the sensations of the breath. Move your attention around. Be its controller. Focus the attention on the sensation of air passing through your nostrils. Focus the attention on the sensation of air passing through your throat. Focus your attention on the belly moving as you breath. As you attempt to control your attention and focus on these things, your attention will naturally drift. This is part of the practice and not a

failure. Seasoned meditators claim to still have their attention drift regularly. However, the practice is to at some point notice that your attention has drifted. When you notice it drifted, become its master again and re-focus it on the breath.

In addition, when an emotion or a compelling thought come up, just observe it without judgment. There is no bad or good to it. Give yourself some space from it. Let it pass through your mind without judgment.

I suggest you do this for ten to fifteen minutes per day to start. This can be divided up into multiple sessions if you would like.

Tips to make it more fun and easier to do: If you struggle with this, you can try guided meditations. A good app that I enjoy is called Insight Timer. I believe it is free on both apple and android operating systems. You can also join meditation groups. Meditating in a group can be a good way to force you to keep meditating as there is a social pressure to do so.

#3 Visualization

There are two aspects to the visualization portion. The first one is to visualize the desired outcome. This means visualizing yourself in an interaction as you would want the interaction to happen. The second part is a bit counterintuitive but highly effective. You are going to visualize an interaction going poorly, however, you are going to visualize how you would like to react emotionally when everything goes wrong in the interaction. Let's explain.

#1 – Imagining positive interactions: I want you to imagine yourself interacting exactly how you would want to. You will visualize yourself speaking fluently and enjoying it. Feel the joy of it. Let it sink in.

#2 – Imagining positive reactions to "poor" interactions: You are going to visualize yourself going through an interaction that would normally cause a lot of pain. Visualize yourself

stuttering. Visualize yourself being rejected. This may sound counterintuitive as you are visualizing what you don't want. However you actually aregoing to be visualizing and experiencing something you want. This "something you want" will be having the reaction you want when an interaction goes "poorly". So, while visualizing a very negative interaction that you fear, you are going to train yourself to react differently to it in the visualization. This can be a huge tool in the self-treatment of stuttering. As everything is going wrong in the visualized interaction, maintain a deep calm and a serenity during the visualization. After all, it is not real. Visualize yourself stuttering in front of another and just observe it non-judgingly. Enjoy the show. Observe this situation playing out and realize that it is not life or death. You are simply talking to another person and your speech isn't flowing. So what?! Nothing more. Laugh at how ridiculous the fear state we enter into is. There is nothing to fear in this situation. Visualize yourself through an entire interaction going very poorly all while maintaining a calm; an enjoyment; a serenity. Visualize the "poor interaction" ending and you walking away maintaining your calm and serenity. You'll realize life goes on and everything is ok. What you are doing is you are training yourself to not fear the "devastation of stuttering" nor its pain. Within this fear is a lie that the world will end or you will die if you stutter. Walking through these visualizations over and over where you stutter but maintain a rewarding inner state can go a long way over time. It can significantly lessen your fear of these situations which can free up stuttering.

As stated, do at minimum one of each of these each day. However, if you have a large amount of painful reactions to stuttering, I want you to perform many visualizations above labeled "imagining positive reactions to "poor" interactions" daily. You have to become a master at not feeling intense pain or fear when stuttering. That exercise done regularly will show you that it is possible to not have these reactions. This way, you avoid the painful states associated with stuttering which is a very

important part of this treatment as you need to un-link speech movements with pain.

Tip: If you would like to multiply the effect of the exercise "positive reactions to negative interactions" invest in some form of massage chair or massaging device. Also get a pair of headphones if you do not have them. When you are performing the exercise, sit in the massage chair while listening to very relaxing but uplifting instrumental music. Your unconscious will associate these "negative interactions" with these relaxing states and pleasurable feelings which will significantly strengthen the effect of this exercise.

#4 Affirmations

In altering the unconscious you are also going to bombard vourself daily with positive affirmations. You are going to take these affirmations in in various ways. The first way is you are going to read the positive affirmations aloud each day at least twenty-five times. The second way you are going to take in the affirmations is a more passive effortless way of taking them in. You are going to record them on a recorder and play them back regularly. This way you can listen to them as you fall asleep, are showering and/or brushing your teeth, and/or as you drive etc. You can simply bring the recording wherever you go and play it back to yourself. This is an easy way to increase the input of these messages. The third way I suggest you take them in is more consciously. Sit and listen to your recording and let each message resonate. Hear the words and believe them. Focus consciously and absorb the affirmations. Lastly, I want you to write them once per day. This will make it go into the unconscious as you think deeply about them as you write.

I suggest, as stated, that you read them aloud 25 times per day minimum. I also suggest that you play them back about 25 times each on the recorder. In addition, I suggest you listen to them consciously about 5 times each. And lastly I ask that you hand write them once per day.

I also suggest you do these affirmations in both "you" form and "I" form. This means that one affirmation may say "I find speaking to others easy" and the other would say, "You find speaking easy".

Note: Making the recordings should be done using the strategies suggested for reading aloud. You can use a metronome to get the recording done if this induces fluency. If not, there is likely an app that can convert typed words into speech or you could have a friend or family member record it for you.

Suggestion to make it more fun and easier: Find a relaxing or uplifting piece of instrumental music and make the recording with this as the backdrop. You can use different songs. This way it is almost like you are just listening to music you enjoy. You can also do this while saying them and writing them.

Here are some affirmations I use. Feel free to borrow some of them or make your own.

Fear to Calm Affirmations

Calm floods my mind and body.

There is no future pain to fear. It is a lie.

It's good if I stutter. I will still be liked, accepted and seen.

Every day in every way I am becoming calm.

I reject all fears of judgment based on how I talk and what I say.

Every day in every way I am becoming serene while interacting.

I focus on connection.

Fear of stuttering is laughably ridiculous.

There is only bliss after connection.

Fear is an illusion. I am safe.

I am calm, serene and safe.

Every day in every way fear of stuttering is diminishing.

My body is relaxing and my mind is calming.

Communication-Focused Affirmations

My speech flows easily, instantly, and automatically.

I focus totally on my message.

I love to speak and to talk!

I speak instantly.

I speak easily.

Every day in every way my speech is flowing more and more.

I speak to communicate.

I am an excellent communicator.

I enjoy speaking and interacting with others

General Affirmations

I enjoy connecting with others.

People like me.

My content and message are always great.

I'm smart, friendly, and nice.

My great qualities shine through.

I will be liked accepted and seen.

I smile a lot.

I am happy.

My mind is filled with hope, excitement and happiness.

Negative experiences and negative memories are liars.

Social phobia is laughably ridiculous.

Desensitizing to Stuttering Affirmations

It is completely and utterly ok if I stutter.

I react calmly and serenely to stuttering.

People will like me if I stutter. They'll see I am human.

In a stuttering moment I calmly surrender to my lack of control until my speech flows.

I love how much stuttering has taught me about life.

Stuttering is a great teacher.

My reaction to stuttering is calm.

...

As stated, put them in the "you" form as well.

#5 – Free Write

Another form of expression besides speaking is writing. It is similar to speaking in that you perform a physical act to express inner thoughts and feelings. Also, like speaking, writing is an automatic ability. Take out a pen and paper very guickly and write a sentence. As you do, observe how you do not think about the movements your hand must make to write what you are writing. Observe how the hand itself almost knows what to do. This is how speaking should feel too. Daily, I want you to free write. Part of this whole process is to not filter what you write. This writing is only for your eyes. The only purpose of this is to not filter at all. Whatever comes to mind and whatever the pen ends up writing is completely and utterly acceptable. This is the whole point of the exercise; to freely express without filter. Filtering and suppressing has a role in stuttering. I want you to use your automatic ability to express yourself in an unedited way. Do this daily in the form of free-writing. It can be both a very interesting experience as well as a revealing one. It

can also be very freeing to not worry that the words won't come out and that you can express yourself exactly as you desire without accommodating the perception of another. Don't let your hand stop moving. That's the only rule. Nothing is incorrect. If there is cussing, great. If it makes no rational sense, great. Just keep writing and keep moving your hand.

Do this daily for ten minutes minimum.

#6 – Unconvering/Releasing Emotions & Being Expressive

Taking an attitude into communication of expressiveness can be beneficial. Frame situations in a way of "I am going to expresss myself" and/or "I am going to release my thoughts/feelings" in this communicative interaction.

Also, find unique ways to express all kinds of different emotions from anger to sadness to extreme joy. Get creative. Releasing pent up emotions and giving yourself permission to express them can be helpful

#7 - Mindfulness Exercise

Mindfulness practices in my experience are largely about being in touch with the here and the now. It is about being in touch with sensations that are happening now and not projecting into the past or the future. It's about building an experience of the present moment and spending less time in one's thoughts and head.

To get you started on a practice like this you can do a small activity. They may seem a bit unorthodox but they put you in touch with the moment which doing this a little each day can manifest bigger results over time.

Some mindfulness practices include walking very slowly with your shoes off and focusing your attention on every sensation your feet feel. It could be walking around and touching different things in the environment and exploring their tactile sensation. It could be eating a piece of chocolate very slowly and noticing the

subtleties of flavor. It could be listening to all the subtle sounds in your environment etc.

Do an exercise like this for 5-10 minutes per day to put you more "in the now". Much of stuttering is about thinking about stuttering and thinking about the future pain of stuttering in the next interaction. Bringing yourself into the now as often as possible takes us out of our thoughts and our projections in time.

In addition, throughout the day ask yourself, "Where am I?" and answer "here". Then ask yourself "What time is it?" and answer "now". This will remind you that you are in the here and now regularly instead of being wherever your mind would have you in your head.

#8 – Surround Yourself With Positive Uplifting Messages

The more positive input into your mind the better. Fill your mind with information that is good for you. Read books that focus on becoming the best version of yourself. Read books about how you are a great person at your core no matter what. Watch shows that convey positive messages. Listen to music that uplifts you and makes you feel good about yourself. Bombard yourself with positive inputs in as many ways as you can. Build your confidence and self-esteem. Daily inputs are a big deal. Listen to speakers that inspire you. Fill yourself with good things. This is important.

Just as important is removing negative inputs.

#9 - Know Who You Are and That You Are Good

No matter what happens know that there is absolutely nothing wrong with you or stuttering. There is nothing to be ashamed of. You are an incredible person inside and out. The world's experiences may have convinced your subconscious of lies it now believes that you are less than or that you should feel shame in stuttering. This is a lie. You are an incredible person deserving of all life has to offer. Know this. It may be a process but work

to know this. There is nothing wrong with stuttering at all. Keep moving forward and focus on the positive.

In-The-Moment-Strategies

We discussed at length above how stuttering is a problem involving lack of control in regards to speaking. A person who stutters goes to speak and is not able to make speech movements (speak out loud) as they desire. The movements sometimes happen and they sometimes don't.

In this section, we are going to focus on what we control and what we should do with what we control in the moments of interaction and the moments leading up to interaction. The three things we control as documented at length above are: attention, mental action, voluntary muscles (movement). We're going to look at each one and discuss how we should use them during interaction and leading up to interaction.

Attention

During interaction, ideally your attention will be focused on your message. While you are talking, your attention should be focused on constructing what you want to say in terms of concept. You should focus your attention on the message. You can assert some of your power of the attention to do this. If you are not focused on the message, you should focus it on something positive. For example, focus your attention on a positive thought; for example, "this person is friendly" or "this person wants to connect with me". Focus it on an image of the person smiling and accepting you.

So, to clarify, what should you do with your attention?

Either focus it on the message or focus it on a positive thought. Having it focused here will increase the chances that the unconscious will choose to allow speech flow.

Where should you not focus your attention?

With whatever power you have over the attention, do not focus it on a negative thought. Do not focus it on the idea that you

might stutter and the idea that the upcoming interaction is going to be painful. Do not focus it on an image of the person rejecting you. Do not focus it on your anxiety etc.

You want to focus your attention on your message or on a very positive thought/mental action, which brings us to our next element that we control

Mental Action

The definition of mental action was discussed at length above. To recap, mental action is basically any type of thinking. It involves using the imagination to visualize an image or a movie. It can be hearing an audible thought or hearing a bell ring. It can be doing a math equation. It can be the performance of any mental act.

What you do with your mental action (something you have control over) will affect whether the unconscious chooses to allow speech to flow or to block it.

So, what types of mental actions will allow speech to flow?

One of my favorites is using the mental action of "framing the interaction". As I approach the interaction I frame it in a positive way. In other words, I view the interaction through a positive lens. I will frame the interaction in ways such as this: "This person wants to connect and so do I.", "They will like me even if I stutter. Just be friendly and communicate my point. I'd like me that way.", "I know this person will approve of me." etc. Using the mental action of framing in this way can be very helpful.

Other mental actions that can be very positive are just saying some of your affirmations to yourself in your head. You can visualize your listener smiling and accepting you. You can play a voice of someone you admire saying you will do great. You can see that things will still be completely ok even if the interaction doesn't go perfectly.

Basically you want to perform as many positive mental actions as you can. Positive and re-assuring mental actions affect the unconscious and make it more likely to enable fluent speech.

What types of mental actions will make you more likely to block?

Of course, the opposite answers are more likely to make your speech block. If you frame the interaction in a way that the person is unfriendly and will reject you, your unconscious is more likely to block speech. If you view interaction through the lens of "this is going to go horribly", then this makes it more likely that you will block. If you are performing the mental action of saying "I'm going to stutter, I'm going to stutter and this is not going to go well", then you are more likely to stutter. If you are envisioning the listener rejecting you, you are more likely to stutter. These are all examples of mental actions that inhibit speech flow.

Bottom line: Use your will to affect and control mental action as much as you can to bring more speech-flow inducing mental actions into your mental space.

Note: I am fully aware that you are not in full control of mental action. Some negative thoughts etc. will likely pop in automatically based on past negative experiences etc. The "preparation" portion of this self-treatment guide is designed to begin improving those as well. However, in the moment, you should still exert the power you have to control the mental action that you can.

More on mental action <u>here</u> if you would like.

Voluntary muscles

The third thing we have direct control over are the voluntary muscles of our body. As with the other two, this was discussed at length above. To briefly cover again, we can directly contract and relax voluntary muscles. In other words, we can move our bodies and relax our bodies with our will. This is important as

what we do with our body factors into whether the unconscious formula will deem it should block speech or allow it to flow.

Briefly, there is something called the polyvagal theory which is based on the vagus nerve. The vagus nerve reports the status of the body to the brain. The brain receives input on whether your muscles are tight etc. and the brain uses this information to determine whether a threat exists. In other words, if the body is tense, the mind is more likely to get tense as it believes the body is tense for a reason. You can read much more on this if you explore the well-established polyvagal theory.

In continuing however, as we have control over the voluntary muscles of our body we can use this to affect the unconscious formula for stuttering. In general, the more relaxed the better of course. If you enter an interaction, and your whole body is tight and you're breathing rapidly, this would move the needle more towards stuttering. However, if you take a moment to relax the body and slow the breath (all of this is directly controlling muscles) this can move the needle more towards allowing speech flow.

Use your control over the voluntary muscles of the body. Relax the body. Let it be. Let it move naturally. Let your body language be natural. Free it from tension as best you can.

Adage: Tension is who you think you should be. Relaxation is who you are.

Post-Interaction Recovery & Celebration

If you endure on this process you are likely to have some interactions that "go poorly". You are also very likely to have some interactions that propel you and make you feel great. Let's address what to do with both.

If you have an interaction that was painful and you did not like, I want you to re-process it that same day.

How do you do this?

You are going to re-process the memory. At the end of the day or even immediately after the interaction (whenever you can), I want you to re-visualize the interaction. Maintain a calm and serenity while you do this. Watch the interaction and then check in with yourself in the present moment. Realize that you are completely safe and ok. Go back to the memory again and view it through different lenses. See how you did nothing wrong and are still a great and lovable person. Replay the interaction again and change what happens this time. Play the interaction how you would have wanted it to go. Visualizations store similarly to memories. Your subconscious will somewhat believe that your new visualization where you altered the interaction was the real one. Take a deep breath. Realize that you are absolutely ok and move on.

On the other hand, if you have a great interaction that you are really thrilled with I want you to replay these too. Change nothing. Watch the interaction in your head and realize how far you have come. See how you are doing things you once thought impossible. Feel the potential this speaks to. Feel the possibilities for your life. Relish the feeling of this positive interaction. Maintain the feeling as intensely as you can for as long as you can.

More...

35 Day Self-Treatment

I ask that you apply the above self-treatment guide very closely for thirty five straight days minimum to see its effects. Take one half day per week as break. Cut the above suggested times/repetitions in half on that one day per week. I strongly believe you will notice measurable change and for some, much more than that. Obviously continue doing it beyond the thirty five days to maintain and increase its effects. The sky is the limit. You are reversing the stuttering snowball. The longer you apply the above self-treatment guide and the more thoroughly, the more results you should see over the long haul.

Remember, belief really matters!

More Important Topics to Address

Build Positive Interaction Experiences

Talk with people whom you feel connected to and have positive interactions with if you have any. You want to equate interaction with positive emotion as much as possible.

Join supportive groups like Toastmaster's where you can explain you are a person who stutters and are working on different aspects of your speech and communication. These groups are understanding and you can leave with powerfully positive experiences in regards to giving a speech etc. This does a lot for the unconscious mind.

Talk with others who stutter if this is a situation in which you enjoy speaking. There are local National Stuttering Association chapters and groups online like Facebook's Stuttering Community where you can meet others and set up interactions.

Incidents

Having lots of speaking experiences that are deeply painful is not good for making the changes you want to make to your unconscious regards to speaking. lt is ideal to in minimize/eliminate these painful reactions. If you have a lot of these you should do a lot of work with the "positive reactions to negative interactions" exercise. You have to desensitized. You should also bombard yourself with "fear to calm affirmations" as well as "desensitizing to stuttering affirmations". It is very important that you are not feeling deep pain regularly based on stuttering.

Notice I did not say it is required that you don't stutter in interaction. Stuttering is completely ok. However, if you react very painfully to these scenarios, you may need to do more visualizations of accepting these scenarios so they are not so painful or you may have to read more affirmations to get these scenarios to not be as painful as stated. Thirdly, you will have to make a decision on whether you should sometimes refrain from

a very intense speaking situation due to its likelihood that it will result in a deeply painful experience. That is up to you. However, building positive experiences and becoming less reactive to negative ones is very helpful.

Momentum Matters

Being consistent in the above practices over a period of time is important. Following the self-treatment guide for four days and then taking a week off and then doing it for three days and then taking four days off is not going to result in the desired changes. Consistency and persistence matter.

I will also say that doing a little is better than doing none. If you're going strong for a week and then it tapers off it is better to listen to the affirmations and read them twice than it is to do nothing on a given day. This applies to all of the exercises.

Technique

As stated, I do not teach a technique as automatic/natural speech is what I believe in. I am not opposed to a technique however. If you use a technique you must strongly believe in the technique and focus on it. If you focus on aspects of the technique, you are not focusing on stuttering and this can cause flow. So, with technique, you must deeply believe it works and also focus on it. If you are attached to a technique then I support your use of it. However, I would ask that you use it to get you to automatic speech. In other words, if you use a technique to initiate speech, I would suggest you only use it to initiate the speech and then allow speech to flow automatically.

I am familiar with numerous techniques. Some people like certain ones. If you feel strongly that you have to have a technique or have been using one that you find effective, I'm not going to take it from you.

However, I would ask that you implement natural speech wherever you can and try to grow it.

Vision For a 90 Day Treatment Center

The method written within this piece is mainly designed as a self-treatment method and can be effective. I do have longer term plans for more however, which goes beyond self-treatment.

There is no place on earth that I am aware of that is a long-term treatment center for stuttering. I have a vision to open one. It would be a minimum 90-day stay center where staff and clients would dig deeply into every aspect of each individual's stuttering and treat it; lay a strong foundation and design truly effective aftercare for each individual. Being in a daily environment working on stuttering with other people who stutter as well as staff can make doing the work nearly effortless confronting some of the challenges listed above. There are also things you can do in groups that can't be done alone. This center would provide some significant advantages over self-therapy, however, self-therapy can often get the job done as well.

Individualized Plans

As obviously not all people who stutter are identical in their stuttering and beyond, ideally, treatment would be tailored to each individual. There are certainly many commonalities among stuttering and its nature and the above treatment guide addresses some of the most core issues of stuttering.

Problem Sounds & Words

Many people have certain sounds or words that bring about a lot more stuttering. Many people really struggle with saying their name. I had a similar situation personally. I struggled with answering the phone, "hello". I could have long blocks answering the phone.

My approach to these is to apply some of the above methods. Firstly, in a context where you can say this word or sound fluently, I want you to do it often. So, if you can say your name alone fluently, say it hundreds of times per day. If you can't

say it in this context whisper it. If you can't do that, say it to a metronome. Say it tons of times. You can say it. Period.

In addition, I want you to apply the visualization techniques. Visualize yourself saying it with no problem in very difficult environments.

I also want to minimize the pain and fear you have of being unable to say the feared sound/word. To accomplish this you are going to apply the second visualization technique. Use the "positive reactions to negative interactions" tool on this. Visualize yourself stuttering badly on your feared sound or word in high pressure scenarios. Maintain calm and serenity in the visualization. Follow the above guide for this visualization.

All this can free it up.

A final suggestion: What I did for answering the phone at certain times in my life is I set my phone alarm five times per day to have the same sound as my ringer. After practicing saying this word many times ("hello") I needed to add some pressure. When my phone rang I did not know if it was the alarm or if it was a real call. I would answer it. This added a bit of pressure. This helped me over time.

If name is a struggle, you may be able to do the exact same thing once you have been doing the name repetition hundreds of times per day and the visualizations. Set your phone alarm if you have one with the same sound as your ringer. It may be a bit odd but start answering calls saying "(name), here" or "this is (name)". This can begin to implement the name in what feels like real scenarios.

Relapse

Many people refer to a recurrence and/or increase in stuttering after a reprieve to be a relapse. First and foremost, I want you to fully expect to not relapse. Fully expect positive changes to be permanent. As stated our thoughts and beliefs are powerful. Once you start making progress, don't start saying,

"well, can't wait for the relapse". No, you should state "this is here to stay" and fully believe it. Don't let anyone tell you otherwise.

If you still have setbacks which in all reality is possible (you should still fully believe you won't) continue to apply the principles. Also, shake it off and keep pushing. If you have setbacks believe fully "this is very temporary' and "I'll be right back on track in no time".

In addition, start examining within yourself to see if certain mental shifts have crept in. Have you started planting and allowing seeds of doubt to grow? Have you stopped framing interaction in very positive ways? Have you started focusing on stuttering and not the message? Have you forgotten positive framing of the interaction?

I have had a few setbacks and usually there is something identifiable going on if you really search. Once you fix it, you're back on track.

Going the Extra Mile

As stuttering events (especially at a young age) can be traumatic, I suggest you do see a therapist who has some specialty in trauma. This of course is not mandatory but recommended. You may even be turned off by the term trauma as it is a "heavy" term. However, everyone has some trauma. It doesn't matter who you are. Being ridiculed, ostracized or bullied for stuttering certainly qualifies as a traumatic experience. I suggest seeing a therapist with a specialization in EMDR (eye movement desensitization and re-processing) to help to process some of these painful memories. It can have a powerful impact on the unconscious mind.

In addition a therapist who specializes in Cognitive Behavioral Therapy is also suggested. This allows us to identify thinking distortions we have which can alleviate irrational fears etc.

Lastly, talk therapy can be helpful too. Immediately explain that stuttering is a big issue for you with any of these therapists and you have to be comfortable talking and coach them on that in the first session. Some people have never really had a chance to talk with someone about their experiences with stuttering. Sitting down with a talk therapist who is just a good listening ear and can offer helpful suggestions is a good idea.

If you can find a therapist who does all three, all the better.

This is Your Journey - More Will Be Revealed

I would like to state that this is your journey and this is your life. You are on your path for your own reasons and to learn your own lessons. The above certainly contains some very helpful guidelines, however life is likely to teach you things I have not. You are your own genius. Life and the universe will reveal much more to you.

Other Thoughts on Treatment

Anything that affects the reward system can also affect stuttering. Things like caffeine, sugar, alcohol (anything that affects reward) all have effects on dopamine and reward. These can have impacts on stuttering severity.

As reward is linked with movement and stuttering. Future treatment could aim at directly increasing the unconscious reward for speech movements through chemical, neurological or behavioral means.

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