THEORETICAL DEVELOPMENT OF A PROPOSED RATIONAL EMOTIVE BEHAVIOR THERAPY BASED MODEL TO TREAT PERSONS WITH CHRONIC PERSEVERATIVE STUTTERING SYNDROME

(Under the direction of Norman Mar, Ph.D.)

This work was motivated by meta-analyses of outcome studies in which a third of individuals who received current stuttering therapies experienced minimal positive results. These individuals remain afflicted with life-long chronic stuttering.

This theoretical work approaches chronic stuttering from a new, revolutionary point of view. First, the stuttering problem is defined holistically as Chronic Perseverative Stuttering Syndrome (CPSS) that includes dysfunctional ideation, emoting, behaviors, perceptions, and life choices of the person who stutters. The holistic definition addresses abnormal visible or audible speech and non-speech producing muscle functioning during speech production, avoidance behaviors while speaking, self-defeating attitudes and unhealthy negative emotions, and self-limiting life choices.

Second, building on the bio-psycho-social model, based on the neuropsychological and Rational Emotive Behavior Therapy framework, a stage-by-stage model of how developmental stuttering begins and perseveres throughout the lifespan is constructed. The model begins with epigenetic systems theory and subsequently addresses the pre-natal, birthing, and early language acquisition stages, while also addressing the classical conditioning associating speech with danger and operant conditioning associated with the development of secondary symptoms. The developmental model includes both unsuccessful and successful therapy experience stages.
Third, focusing on REBT techniques, the stutterer’s self-concept and beliefs that interfere with his/her speech production are examined. A detailed step-by-step therapy protocol is presented to modify the client’s speech, as well as modify the “wiring” of his/her brain that interferes with fluent speech. At each step the techniques used are explained in detail and the reasons for using each specific technique are given. Throughout, the client is taught how to change the irrational (unhelpful) beliefs and unhealthy emotions—beliefs and emotions that interfere with fluent speech and self-actualizing life choices—into more rational (helpful) beliefs and healthier emotions. From this detailed material a therapy manual to test out the effectiveness and efficiency of therapy can be readily built.

Because the therapy protocol is presented in precise and coherent detail, it is accessible to both psychologists and speech-language pathologists. Additionally, this dissertation captures the current zeitgeist of evidence-based practice and is compatible with current search for the application of psychology to the problem of chronic stuttering.
THEORETICAL DEVELOPMENT OF A PROPOSED RATIONAL EMOTIVE
BEHAVIOR THERAPY BASED MODEL TO TREAT PERSONS WITH CHRONIC
PERSEVERATIVE STUTTERING SYNDROME

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Dedication

I dedicate this dissertation to the present and past administrators and faculty of the Washington School of Professional Psychology/Argosy University who encouraged me and gave a chance me to pursue my life-long dream. Special thanks go to Drs. Max Hines, Frances Parks, Bonnie Wolkenstein, Nina Parker-Cohen, Laura Brown, and Norman Mar who did everything in their power to ensure that I would finish my Psychology Doctorate degree.
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CHAPTER I

INTRODUCTION

Historical Overview of Stuttering

The verb *to stutter* is defined by the Random House Dictionary (1987, p. 1890) as “1. to speak in such a way that the rhythm is interrupted by repetitions, blocks or spasms, or prolongations of sounds or syllables, sometimes accompanied by contortions of the face and body.” Stuttering and people who have stuttered have been recorded throughout the written history of mankind. For example, Golenishchev (1913) provides us with the hieroglyph for “stutter” and the Old Testament, *Exodus* (1973), states that Moses stuttered and had to use Aaron to speak for him.

Shell (2005) notes that in addition to Moses there have been other leaders and rulers who stuttered. These include: Battus who founded the Greek colony at Cyrene in Libya (630 BC); the Roman emperor Claudius (41-54 AD); the Byzantine emperor Michael II the Stutterer (820-829 AD); the French king Louis II (877-879); the English kings Charles I (1629-1649) and George IV (1937-1952); and Britain’s prime minister Winston Churchill. The list of stutterers who have contributed to all fields of human activity include such luminaries as Aristotle, Charles Darwin, Tiger Woods, Mel Tillis, James Earl Jones, Marilyn Monroe, Prince Albert of Monaco, and business leaders Jack Welch and John Sculley (Stuttering Foundation, 2008). The listing of all the famous and infamous documented stutterers in history is considered to be out of the scope of this dissertation because of its encyclopedic proportions.
However, not all of the people who stutter are famous or successful. The prevalence of stuttering, or the rate at which a condition can be seen in the general population, has been established (see Bloodstein and Ratner, 2008) to be somewhat less than one percent in the United States and somewhat more than one percent in Europe. Assuming that the prevalence of stuttering is the same among all the peoples of the world, and noting that the current population of the world to be 6.6 billion inhabitants, there are currently 66 million stutterers in the world! The United States has a current population of 303 million and assuming a one percent prevalence of stuttering, there is possibly approximately 3.03 million people in the United States alone who stutter.

Historical Treatment of Stuttering

Shell (2005), quoting Exodus, concludes that Moses was never cured of his stuttering. On the other hand, the Greek orator Demosthenes (383-322 BC) was cured by his speech-language pathologist, the Greek actor Satyrus, who made him talk with pebbles in the mouth, look in the mirror as he talked, and recite poetry while walking uphill.

Goldberg (2008) summarizes the checkered history of stuttering cures before modern times. Aetius of Amida (6th century) of the Byzantine Empire first advocated surgically separating the frenum, a fold on the underside of the tongue. Surgery remained the most popular treatment for centuries. Johann Frederick Dieffenbach (1795-1847) a German surgeon and H. de Chegoin in Paris, both devised their own special surgical procedures to cure stuttering without any real success. In 1817, J.M.G. Itard reported that a special gold or ivory fork placed under the tongue had cured stuttering in two cases. Later, reports from different sources disclosed that the cure had not been permanent.
Charles Canon Kingsley (1819-1875), an orator who stuttered until the age of 40, proposed that a combination of dumbbell exercises and placing a piece of cork between the back teeth would cure stuttering.

Van Riper (1973) documents other treatments that have generally failed to provide consistent results in therapy. These include: a) direct suggestion as practiced by Beasley (1897) and Yearsley (1909); b) hypnosis as described by Donath (1932) and Richter (1928); c) speech drills as described by Schmalz (1846) and Schoolfield (1938); d) prosthetic devices of all types that interfere with breathing are inserted in the mouth or cover the Adam’s Apple (McCarthy (1970) says that there are 70 such devices registered in the United States Patent Office); e) distractions as suggested by Potter (1882) include drawl (like stereotyped Texan speech) and sniffing; f) relaxation therapies as advocated by Hoffman (1840) and Robbins (1926); g) the rhythmic, timing, and rate control therapies of Thewall (1812) and Bluemel (1913); and h) punishment and reinforcement therapies such as Dr. Frank’s method described by Hunt (1861) and Glasner (1947) who advocated praise for fluent speech and punishment for stuttering. More recently, Goldberg (1981) used the administration of an electrical shock when a person stutters; Shane (1955) introduced masking noise during speaking, and Soderberg (1969) proposed Delayed Auditory Feedback, an electronic feedback of voice into the speaker’s ear after it has been delayed from one to a few hundred milliseconds. Many of these techniques are still used in either modified or original form.

**Current Treatment of Stuttering**

Currently stuttering therapy is administered by Speech and Language Professionals (SLPs) who have earned a Bachelor of Arts and Master of Arts degree in
speech therapy. Their education is broad-based covering all communication problems including articulation disorders and fluency disorders. The SLPs are licensed by the state in which they practice.

Current stuttering therapy has mainly focused on retraining the muscle groups that are used in producing and regulating breath, the voice-sound producing muscles (the vocal folds) and the speech shaping muscles such as the lips and tongue. These main therapies are categorized as fluency shaping, stuttering modification, and integrative therapies.

**Fluency Shaping**

The ultimate goal of fluency shaping (FS) is totally fluent speech. Fluency shaping (Webster, 1980) is applicable to adults with the objective of teaching the client to master certain motor and/or muscular skills required for normal speech. These muscle movement patterns are called target behaviors and are taught in a definite sequence. Advocates acknowledge that it takes intensive practice to achieve fluent speech. First, prolonged speech is introduced using simple syllables and sounds to learn detailed muscle movement patterns that resemble those of speakers without a stutter. Some programs use interactive computer systems to provide both visual and auditory feedback of the clients’ speech. Slow speech is mastered through the hierarchy of sound formation starting from unitary simple sounds, to syllables, to words, ending with simple sentences that culminate in conversational speech. Next, the training consists of “easy onsets” that are exaggerated and avoid any semblance of hard contacts of tongue or the lips with each other or the roof of the mouth. Again a hierarchy is used and the phonatory targets are compared to the computer expected results, giving the client opportunity to shape his or
her oral output to approximate the desired output displayed on the computer screen. As the client becomes more and more capable of reproducing the computer directed prolongations and easy formations of sounds, the syllable duration is reduced according to given algorithms producing increasingly normal speech. The final step is the transference from the therapy clinic to real-world settings. Before the transference is initiated, the use of the computer in the laboratory is eliminated.

The focus is on the vocal tract, respiration rate, and gentle onsets of sound, combined with prolongations that are eventually reduced so as to resemble normal speech. Care is taken to advance the complexity starting at the phoneme level through words to simple sentences and then to more complex sentences. Computers are used for monitoring the speech via computer feedback eventually graduating to proprioceptive feedback by the client. Since the new way of speaking is learned in the clinic it is necessary to transfer these skills to the real world. This transfer process is often challenging and sometimes not completely successful. In order to increase the rate of success the new way of speaking is practiced in intermediate situations, such as talking to graduate and undergraduate students, asking questions of the secretaries within the clinic, carrying on conversations with the speech clinic staff, and using the telephone in the presence of a therapist. Only then is the client sent out in real world situations. It is important to note that not all fluency shaping programs use computer feedback. Sometimes the feedback is provided only by the therapist.

*Stuttering Modification Therapy*

Stuttering modification (SM) was first developed by Charles Van Riper (1973), but has been updated as recently as 2006 by Hellison in *Speech Therapy for the Severe*
Older Adolescent and Adult Stutterer. The expressed goals of stuttering modification are modification of stuttered speech so that the outcome is forward moving speech with minimum abnormality and minimum anxiety experienced by the speaker. In 1939 Van Riper coined the acronym MIDVAS, which stands for Motivation, Identification, Desensitization, Variation, Approximation and Stabilization. Motivation is self-explanatory. Identification consists of all the overt and covert things the client currently does as he or she stutters. Desensitization is frequently achieved either through voluntary pseudo stuttering or by stopping and saying the word again, not perfectly, but in some altered way. This technique of “cancellation” is also useful in varying the pattern of stuttering. As currently practiced, the therapist does not provide the client with self-talk to rehearse while performing these various exercises. After the client is able to cancel a stuttered word, he or she is advised to hold onto a stuttering moment until he or she is confident that he or she can alter it, and then slowly but purposefully, in a prolonged way, finish the stuttered sound. The final technique is called the “preparatory set,” where the client is instructed to set the voicing articulators in such a way as to assume the posture that a normally speaking person would use before he or she says that particular sound or word. Stabilization consists of over-learning the techniques so that they can be used in ordinary day-to-day situations.

Although in the original formulation only prolongations of initial sounds were allowed, some therapists now advocate a “bounce” (repetition of a syllable) as equally valid. Attitude is changed presumably by voluntary stuttering and cancellation. Mental toughness is built not by Rational Emotive Behavior Therapy disputation, but by some counseling and rote performing of speech exercises. Monitoring of speech is *sine qua non*
if preparatory sets are to be used. Field trips are generally interspersed with various speech exercises so as to more readily generalize the gains. Many of the practitioners suggest yearly follow-ups and/or telephone contacts at given intervals.

**Role of Counseling**

Counseling in stuttering therapy was brought to the forefront by The Stuttering Foundation in 1981 with the first edition of the book *Effective Counseling in Stuttering Treatment*. The current (second) edition includes chapters by nine authors: Hugo H. Gregory; Eugene B. Cooper; Joseph G. Sheehan; Diane G. Hill; Dean E. Williams; Charles Van Riper; Barry Guitar and Julie Reville; Patricia M. Zebrowski, and Peter R. Ramig. In the foreword of the second edition, Zebrowski (2006) best summarizes the view held by these SLPs:

“As individualistic as we are in what we do, we nevertheless agree on this basic premise: That counseling is first and foremost about listening to and talking with our clients, and in doing so, helping them understand how their emotions affect their thoughts, and how their thoughts and beliefs motivate what they do. By recognizing this, our clients who stutter and their families can move ahead to problem-solve what they need to do to feel better.” p. 6.

Another area where the SLPs who do use counseling agree is that counseling is an adjunct to speech therapy and not the main focus of therapy. Counseling as discussed by the above authors is designed to help SLPs focus on working with desensitization, fears, attitudes, environment, emotions, and listener reaction besides just doing FS or SM. The therapy and research literature, generally does not focus on a theory-based approach to changing dysfunctional emotions, self-defeating (irrational) cognitions, and does not provide a counseling framework to assist in changing undesirable behaviors, such as primary stuttering and associated behaviors such as head jerking, etc. (called secondary

*Comparison of Fluency Shaping (FS) and Stuttering Modification (SM)*

Both therapies are conducted weekly, twice-weekly, or as intensives lasting two to three weeks for nine hours per day. Many special adaptations and modifications of the programs are available including integration of concepts from both of the programs.

Generally speaking, proponents of FS assume that stuttering is strictly learned, that the only successful outcome is stutter-free speech (whether spontaneous or controlled), and any relapses should require recycling through the program. The FS proponents do not address fears or negative attitudes, but assume that they will disappear as a result of acquiring fluent speech (Shapiro, 1999).

Advocates of SM support the belief that some stuttering results from avoiding or struggling with disfluencies or is a result of fears and negative attitudes. Although they prefer the outcome of spontaneous fluency or controlled fluency, non-struggling stuttering is acceptable. SM advocates talk about fears, avoidances, and negative attitudes, but do not seem to employ any psychological techniques toward reducing them with the exception of positive thinking and desensitization through exposure. SM supporters claim that SM reduces avoidance through suggestion and conversing about the advantages and disadvantages of avoidances. Reduction of fear is mainly through voluntary pseudo stuttering and staying in difficult situations. The SM advocates generally do not use any CBT or cognitive therapy tools. Table 1 summarizes the main differences between FS and SM. Although outcome comparisons are desirable, the
Table 1

Summary Comparison of Fluency Shaping and Stuttering Modification

<table>
<thead>
<tr>
<th></th>
<th>Fluency Shaping</th>
<th>Stuttering Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumptions about cause</td>
<td>All developmental stuttering is a learned behavior that can be unlearned.</td>
<td>Stuttering results from fear of stuttering avoidance, struggling, and negative attitudes.</td>
</tr>
<tr>
<td>Behavioral Therapy Goals</td>
<td>Stutter-free speech is the only acceptable outcome. Some unnatural sounding speech is acceptable as long as it cannot be classified as stuttering.</td>
<td>Spontaneous fluency is most desirable followed by controlled fluency and forward moving disfluent speech.</td>
</tr>
<tr>
<td>Affective Therapy Goals</td>
<td>No specified reduction of fears and shame. Assumption that fears and social adjustment will occur as a result of increased fluency.</td>
<td>Reduction of fears and shame in order to lead the life of a normal communicator. Directly discuss the social and vocational roles.</td>
</tr>
<tr>
<td>Cognitive Therapy Goals</td>
<td>None expressed.</td>
<td>Think of oneself as a communicator instead of in terms of stutterer/non-stutterer.</td>
</tr>
<tr>
<td>Therapy Structure</td>
<td>Highly structured, often involving computer feedback technology. Does include demonstrations of “how to” and sequencing of exercises.</td>
<td>More individualized, less structured. Includes teaching, discussions, demonstrations, and some counseling-like interactions.</td>
</tr>
<tr>
<td>Therapy Steps</td>
<td>Relearning how to talk while using exaggerated behavior goals called “targets.” No individualization of process. Programming client via behavior therapy contingencies. Then transferring the behavior to outside world. Often visual feedback via computer screens is employed.</td>
<td>Focus is on reduction of secondary stuttering symptoms including avoidance behaviors. Desensitization via voluntary pseudo stuttering. Talking about fears and elimination of struggling behaviors via a set of techniques. Forward moving, struggle free speech is maintained through avoidance reduction and techniques.</td>
</tr>
<tr>
<td>Success Definition</td>
<td>Speech that is free of any stuttering behaviors.</td>
<td>Forward moving, struggle free speech, with minimal interruptions to communication process. Reduction of fear and shame and pursuit of vocation of choice.</td>
</tr>
<tr>
<td>Success Rates</td>
<td>Bloodstein and Ratner (2008) list 219 outcome studies of adults and older children in the Appendix of their book, and most of these are variations on FS, SM, and an integration of both. However, they avoided making any sweeping statements about the effectiveness of FS an SM. See next section for meta-analysis of SLPs in the peer reviewed literature.</td>
<td></td>
</tr>
</tbody>
</table>
available data analysis is extremely difficult to interpret because the studies have not had standardized designs and do not define successes in the same way.

Outcome Meta-Analysis and Speech after Therapy

A meta-analysis is out of scope for this study. Meta-analyses by other Speech-Language Pathologists (SLPs) in their peer reviewed journals have indicated less than optimal success rates for adult stutterers with Chronic Perseverative Stuttering Syndrome (CPSS). Martin (1981) reviewing long-term results of therapy found that a third of the clients achieved satisfactory long range fluency, a third relapsed, and a third either dropped out of treatment or could not be contacted for follow-up. Craig and Hancock (1995), in a self-report meta-study, found that 70 percent of clients receiving stuttering therapy even after they achieved fluency could be considered relapsed. Conture (1996) reports that “[a]cross the life span, treatment for stuttering appears to result in improvement, on the average, for about 70 percent of all the cases…” (p. S24). Craig and Calver (1991) reported that 58 percent of the clients in a long-term follow-up were dissatisfied with the fluency of their speech. Boberg and Kully (1994), in a 12 to 24 month follow-up, found that in phone conversations 24 percent displayed unsatisfactory fluency and 20 percent reported their fluency less than satisfactory or fair. Shapiro (1999) describes how speech after therapy is usually not spontaneously fluent, but involves a controlled fluency. This type of speaking may have the stuttering events below the threshold level, both in duration and frequency; however, the speech is unnatural sounding and requires considerable on-going effort. These may well be the causes of the frequency of relapses. Perkins (2000) believes the way a person thinks about his or her speech in relationship with himself or herself is the
major cause of relapse. This hypothesis is backed-up by an experiment by Evesham
and Fransella (1985).

They demonstrated that if the stutterers had gained a temporary fluency due to an
intensive course of therapy and were helped to reconstruct their attitudes as to
meaningfully see themselves as fluent speakers, they would relapse at lower rates.

Evesham and Fransella’s study was based on Kelly’s (1955) Personal Construct Theory.

In a recent study, DiLollo, Manning, and Neimeyer (2003) found that persons who stutter
have a difficult time achieving meaningful integration into the role of a fluent speaker.

Assistive Technical Devices

Introduction

Recently a new miniaturized hearing aid size device called SpeechEasy has
gained prominence on television and radio talk show circuits, and in the print media. This
device has been shown to help some stutterers enhance fluency. Some demonstrations on
TV have showed marked improvements in the reduction of both the frequency and
severity of blocks.

Background Information

The device, SpeechEasy, employs both Delayed Audio Feedback (DAF) as well
as Frequency Altered Feedback (FAF). DAF has been used for research purposes,
establishing differential diagnosis, and ameliorating stuttering since 1950s (Bakker,
2007). The DAF uses a microphone to capture the subject’s speech, delay it by 50-250
milliseconds, and feed the delayed speech back into the subjects ear. The delay appears to
help the subject reduce his or her speech rate and enhances learning of prolonged speech
techniques such as gentle (easy) onsets, and continuous phonation (Shames & Florence, 1980).

FAF has a more recent history. FAF captures the subject’s voice and, through electronic manipulation, is able to change the pitch before feeding it back into the subject’s ear. When the pitch is lowered, the speech has a “Darth Vader” quality; when the pitch is elevated, the speech sounds like “Minnie Mouse” or somebody who has inhaled helium and is talking. The FAT is hypothesized to work on the speaker’s perception that he or she is doing choral reading. (True choral reading greatly enhances fluency in most stutterers.)

Current Technology

Until recently, most of the DAF/FAF/combined DAF&FAF devices were not truly portable. Those that were portable were unwieldy with a lapel microphone and a headset for feeding back the altered speech. Nevertheless, some anecdotal evidence exists that some stutterers found benefit in occasionally using these devices (Jezer, 1999).

With the advent of micro computers, Janus Corporation produced miniaturized models of DAF/FAF devices. Their SpeechEasy has three models: a) one is Behind The Ear (BTE), b) another is In The Canal (ITC), and c) the third is Completely in The Canal (CTC).

Current Known Efficacy Status

Unfortunately, neither the American Speech and Hearing Association (ASHA) nor individual researchers have independently verified the success of enhancing fluency in people who stutter (Bakkus, 2007). On the other hand, SpeechEasy is distributed through SLPs who have arrangement in their offices to test whether a given individual’s
speech improves when the device is used. This excludes people who are not benefited by the device (at least in the short term) from buying the device.

Concluding Remarks

At this time the effectiveness of SpeechEasy and similar devices are open to question, even for those stutterers who at the time they first use the device appear to benefit from it. Due to the absence of long-term scientific studies, it is not known whether the effect wears off or if the devices might have some adverse effects with long-term use. Additionally, the ultimate costs associated with the devices, including the initial cost, cost of batteries, and the durability and serviceability of the device due to accumulation of ear wax and the “wear and tear” of daily use raise additional questions regarding the practicality of this device. And, as mentioned before, the device does not help all persons. Further concerns include the effect on the brain development in young children, the unwillingness of many teenagers to be subjected to teasing due to the visibility of the device, and the high cost of replacement should the unit be lost.

Statement of the Problem

Cooper (1993) gives a comprehensive view of the problem in the context of life-span development. Given five children who develop stuttering as they learn to speak: a) two will overcome their problem by the age of seven without any help or only the help of their parents (they will not even recall that they ever stuttered); b) two will get professional help and achieve normal fluency control with rare moments of stuttering; and c) one will develop chronic perseverative stuttering. Cooper (1993) states that the chronic perseverative stuttering will recur after remission or “successful” therapy; it will not be able to be eliminated by a speech therapist. The perseverative chronic stuttering,
according to Cooper, will evoke excessive negative affect, distressing cognition, and abnormal stuttering-related behaviors.

The low success rates may be related to the fact that SLPs have only addressed the phenomenon of stuttering by focusing on changing the physical production of speech behavior of the vocal apparatus: a) the vocal folds, b) mouth, c) breathing, d) lips, e) tongue, etc. Gardner (2008), for example, states that there is a need to “re-train the three muscle groups used in speaking: breath-controlling muscles, voice-producing muscles, and speech-producing muscles” (p. 1). The problem has not been framed broadly enough. The formulation of the cause of developmental stuttering, the reason why stuttering continues, and the frequency of relapse do not comprehensively take into account all biopsychosocial considerations. Most of the theories of development and propagation of stuttering, and especially none of the therapies of stuttering, incorporate an established developmental theory. Nor are all the functions of the Central Nervous System, (CNS) such as cognitions, emotions, and perceptions, taken into account. Traumatic environmental factors that affect a person who stutters during his or her lifespan due to his or her stuttering do not seem to be considered. It is true that some of the theories acknowledge some of the above factors, but none of them acknowledges or addresses all of them. Moreover, just mentioning some of the elements does not mean that they are effectively incorporated in the therapy. Thus, for example, Cooper and Cooper (1985) state that cognitions and affect play a role, but the actual therapy focuses on “Fluency Initiating Gestures,” all six of which are behavioral tactics dealing with the production of the spoken word. Although the therapy includes discussions about attitudes and feelings, no systematic, theory–based approach was provided to change these.
On the other hand, Rational Emotive Behavior Therapy (REBT) is not quite forgotten by the SLPs. Schwartz (1999) and Webster and Poulos (1989) use REBT as an adjunct, first to stabilize the gains and secondly to transfer skills from the clinic to real-world situations. Bloom and Cooperman (1999) and Manning (2001) mention in passing that REBT is an available counseling technique, but do not incorporate it in their recommended therapy approach. Logan (1999) mentions some useful techniques in REBT that could be used to handle destructive negative emotions, but does not formulate a consistent self-contained therapy model that can be tested.

This in turn is aggravated by the neglect of stuttering in professional psychological literature, in both formulating competing theoretical models as well as intervention protocols. Although the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders Text Revision* (2000) includes stuttering (307.0), a thorough search of the psychological literature found no articles published on stuttering from 1960 through 2007.

In SLP literature there are articles that are authored or co-authored by psychologists, but discovering how many is beyond the scope of this study. Two of the articles that have been co-authored by psychologists are DiLollo, Manning, and Neimeyer (2003) and Menzies, R. G., Onslow, M., and Packman, A. (1999), with the psychologists being Neimeyer and Menzies. Some of the early SLPs also had education as psychologists.

In one of the articles, DiLollo, Manning, and Neimeyer (2003) researched the ability of a person who stutters to achieve meaningful integration into the role of a fluent speaker. Evesham and Fransella (1985) had investigated the same phenomena with
respect to relapse. If the stutterers had gained a temporary fluency due to an intensive course of therapy and were helped to reconstruct their attitudes as to meaningfully see themselves as a fluent speakers, they would relapse at lower rates. Both of these studies were based on Kelly’s (1955) Personal Construct Theory. Neither of these studies provided a comprehensive theoretical model nor a complete intervention protocol.

Menzies et al. (1999) propose in a paper exploring the relationship of anxiety and stuttering that cognitive-behavioral procedures need to be studied based on their findings of the interaction between anxiety and stuttering. Messenger et al. (2004) agree that it is time to provide cognitive behavior therapy tools to people who stutter. These tools would be along the lines of what Zebrowski (2005, 2006) proposes.

The above suggests that a comprehensive theory of the etiology and perseverance of developmental stuttering that includes interrelation among cognition, emotion, and stuttering behavior is essential to develop a more effective treatment protocol. The literature search on etiology reveals a lack of understanding that evaluative cognition leads to emotions (cognition→emotion connection) as well as proper emphasis on how various dysfunctional emotions result in exacerbating stuttering (emotion→stuttered speech connection). Hence, there seems to be a lack of true understanding, let alone emphasis, of how cognition is linked to stuttering. Consequently, treatment protocols that properly focus on the treatment of cognitions and emotions, along with the physical production of speech/behavioral aspects of the CPSS, have also not been formulated.

**Purpose of the Study**

The main purpose is to develop a holistic therapy protocol to help the person with CPSS achieve spontaneous fluent speaking to the greatest extent possible. A cure for
CPSS may be defined as the ability to speak without stuttering, having none of the unhealthy negative emotions associated with stuttering, and to even “forget” that one had ever stuttered. This goal, especially the client forgetting that he or she has ever stuttered, is perfectionistic and, probably, unattainable. The alternative to a “cure” is when the formerly stuttering speaker has long periods of time when he or she forgets about his or her stuttering and speaks with spontaneous fluency; at other times speaks with minimal disfluency and disruption to the communication process; and experiences minimal anxiety, shame, or guilt about the possibility of stuttering. This alternative is the goal of this study.

In order to build an effective therapy protocol, it is necessary to develop a comprehensive theoretical model of how stuttering develops, how it is propagated, and the reasons for relapse. All the biopsychosocial factors that are associated with stuttering need to be included in this model so that they are addressed in the therapy.

In situations where this is not possible, the purpose is to minimize disruptions in communication and individual functioning by learning to use controlled fluency and learning new self-talk that minimizes negative emotions.

The therapy protocol should be comprehensive enough to be used by SLPs possibly in collaboration with psychologists. Admittedly, a two to three day seminar will be necessary for the SLPs unless they work collaboratively with an REBT psychologist or a psychologist who knows REBT techniques. The therapy protocol should be detailed enough to serve as a model for conducting outcome studies. Equally important is the need for the protocol to serve as the means to independently replicate the outcome studies.
In summary, the purpose of this study is twofold: 1) to develop a theoretical model of developmental stuttering etiology and evolution of the CPSS through the lifespan that will incorporate current research with respect to all the biopsychosocial factors; and 2) to create a detailed therapy protocol, informed by the theoretical model, that can be used as the basis for manualized therapy accessible both to SLPs and psychologists. The manual will be comprehensive. It will include both REBT techniques to modify the affect and beliefs (self-talk and attitudes) about self and stuttering and will use integrated speech therapy techniques from stuttering therapy (both SM and FS) to help the client manage his stuttering. REBT has been demonstrated to help clients minimize their upsetting emotions, maximize frustration tolerance, and systematically pursue any goals of their choosing. Thus, REBT serves the following purposes: a) to help the client use speech management techniques from SM and FS, such as “pullouts”, and “easy onsets” by increasing the client’s frustration tolerance and dedication to their goal of better communication, b) get over momentary setbacks by using proper self-talk, c) enable the client to do voluntary pseudo stuttering by active anti-awfulizing and convincing himself or herself that he or she “can stand it,” d) enable the client to become more familiar and adept at target behaviors by providing imagery exercises to practice his or her target behaviors, e) to eliminate secondary behaviors by the use of proper self-talk and raising awareness through exaggeration, and f) to provide the client with an emotional and a cognitive state where extended periods of automatic fluency can take place and be maintained without any speech apparatus management by the client.
Limitations and Assumptions

Limitations

The proposed study addresses adult clients and mature clients in their late teens who have CPSS (overt and covert) due to developmental stuttering and who are average or above average in intelligence. The theoretical model and treatment protocol does not address acquired stuttering, mentally challenged or disturbed clients, or children.

The product of the study will be a comprehensive model of developmental stuttering which addresses all of the lifespan issues. The therapy protocol will be presented in a manualized form. The therapy steps in the manual will be designed to be used by a therapist who is either a psychologist or an SLP who has had a minimum of two graduate courses in counseling. In addition, a two to three day seminar to acquaint the psychologist with the basics of stuttering therapy and REBT will be required. The SLP will also need a two to three day seminar to review the basics of counseling and specifics of REBT techniques used in the therapy. Resources for providing this continuing education will be added in the appendices.

Assumptions

The manualized format has been chosen in order to overcome the current prejudice of SLPs to mainly work with voice generating muscles and to provide step-by-step speech exercises for the psychologists. The basics of REBT therapy need to be taught to both groups because neither group is conversant with REBT. Another assumption is that unless research is done to back up the effectiveness and efficiency of this model of therapy, it will not be adopted by a significant portion of SLPs nor will psychologists accept and help clients that are well within their scope of practice.
The lack of interest in stuttering by psychologists is supported by the fact that psychological literature since 1960 has no published peer-reviewed articles. Additionally, only two studies on stuttering or people who stuttered could be identified to have been authored or co-authored by psychologists in the last 30 years and published in the professional SLP literature. These were the studies by Menzies et al (1999) and DiLollo, Manning, and Neimeyer (2003).

It is assumed that with easy access to information on the internet, the complete manuals will be within the reach of interested parties once the core ideas are published in peer reviewed journals and presented to the scientific community. Kuhn (1962) astutely observed that a change from one paradigm to another, such as switching the focus on voice producing muscles to the Central Nervous System (CNS), is not a simple task since so much time and effort has been invested in the old way of approaching the problem. In the case of stuttering, as Perkins (2000) noted, it is much easier to measure the frequency and duration of disfluencies than contemplate the variables that reside inside the CNS and endocrine systems in terms of thoughts, beliefs, self-talk, and feelings of the stutterer.

Hopefully, the managed care health system based on Evidence Based Practice (EBP) will prove to be a strong ally of change. If the theoretical model of stuttering is made accessible to psychologists, they will be able to adapt the therapy to their own style and their own theoretical orientation, thus, evolving and advancing the field of study. Currently, SLPs are fighting to be reimbursed for treating adult clients by insurance companies. Psychologists often are reimbursed since one of the proximal causes of stuttering is anxiety in general and social anxiety in particular.
Definitions

This study integrates two fields of scientific investigation: a) stuttering therapy and b) cognitive behavior psychology, specifically REBT. The two lists below are provided to orient the reader with the terms that are used in REBT that are not in common usage throughout psychology, as well as the general terms from stuttering therapy that are not in common usage in the English language or among psychologists. The terms will not be intermingled in order to keep them separate to provide traceability from the original area of study. When the definition comes from an original source and is not in quotes it has been paraphrased by the dissertator while keeping its original meaning. Both REBT and stuttering therapy literature refers to “ABC.” In REBT it stands for Activating Event, Belief, and Consequent Emotions and Behavior (Ellis and Harper, 1997); in stuttering therapy it refers to Affect, Cognition, and Behavior (Cooper, 1987). In order to minimize the confusion, these two sets of letters used individually or as a collective word should be differentiated. For the purposes of this dissertation “arguments are presented” from the psychological point of view. The ABC relating to REBT concepts will be capitalized and bolded, i.e., written as ABC. Whereas, stuttering concepts will be lower case and bolded, i.e., abc.

*Rational Emotive Behavior Therapy Glossary*

**Activating event (A)** – the situation that causes a person to think, feel, and act. These events can be either external or internal. “When A refers to an external event, we can say that it actually occurred if descriptions of it can be confirmed as accurate by neutral observers (i.e., the principle of confirmable reality)” (Dryden et al., 2003, p.4). In recent works Albert Ellis (2001) has referred to A as adversity.
Active-directive – as contrasted to Rogerian and Freudian therapy where active listening or free association is the main element of therapy. Third generation REBT is more direct – the therapist is more active. Nevertheless, the therapy involves a collaborative effort where the therapist is the expert in what has helped other people, and the client is the expert on himself or herself and his or her view of the world and situation in the world. The therapist is also a teacher who suggests homework (see definition below) (DiGiuseppe and Tafrate, 2007).

Awfulizing – the process or cognitive activity by which a client deems a situation to be the worst possible situation (worse than it absolutely should be), precluding him or her from any enjoyment of life now and in the future (Ellis, 2001; Dryden et al, 2003).

Beliefs (B) – the evaluative cognitions that reflect the constructed reality of the world of the client. “[Beliefs] are either rigid or flexible and extreme or non-extreme” (Dryden et al, 2003, p. 4). Beliefs are categorized into those that are rational and those that are irrational (see definitions below).

Consequences (C) – the resulting emotions, behaviors or cognitions that stem from the interaction of A with B usually represented as A x B (Ellis, 2001). When A is negative, the consequences are categorized as healthy and unhealthy negative consequences (see definitions below).

Discomfort disturbance – happens when a client demands that life should be without any significant discomfort and becomes agitated when his or her demands are not met. In order to combat discomfort disturbance, one is encouraged to work on increasing tolerance of frustration. (Dryden et al, 2003).
**Disputing** – the cognitive process by which a client is taught to challenge irrational ideas using three questions (or their equivalents): a) Where is the evidence? (empirical question); b) Is it logical? (logical question); and c) How does it help you? (pragmatic question) (Ellis, 1994).

**Effective new beliefs, emotions, behaviors** – the new rational beliefs, healthy negative emotions, and self-enhancing behaviors that result from successful disputing (Ellis, 1994).

**Ego disturbance** – deals with not living up to one’s demands on himself or herself. “The rational solution to ego disturbance is to strive for unconditional self-acceptance” (Dryden et al., 2003, p. 9).

**Healthy negative feelings** – the feelings that follow when negative activating events interact with rational beliefs. These feelings result in the client’s increased motivation to change what can be changed in the negative situation, to deal with physical/emotional pain without being immobilized, focus on positive as well as negative aspects of a situation, and move on to self-enhancing behavior and thinking (Ellis, 1994; Dryden et al, 2003).

**Homework** – the negotiated tasks that a client completes between sessions to enhance the therapeutic gains made during therapy sessions. The homework can consist of listening to therapy session tapes or other REBT tapes, bibliotherapy, action therapy, rational imagery exercises, etc. (Ellis, 1994).

**Irrational beliefs** – as contrasted with rational beliefs (see below), these beliefs are not based on observable reality, nor logically deduced from empirical data, do not promote the expressed goals of a client, are rigid (even in the face of contrary evidence), and are
usually “musturbatory,” i.e., are based on dogmatic demands (Ellis, 2001; Dryden et al, 2003).

**Low frustration tolerance** (more accurately, **low tolerance of frustration**) – the inability to tolerate frustration. The client becomes disturbed and insists that he or she cannot stand it if what they demand will not be granted, or what they demand should not be, actually is (Ellis, 2001).

**Multimodal** – REBT uses “cognitive, imaginal, behavioral and emotive-evocative techniques to facilitate therapeutic change” (Dryden et al, 2003, p.10).

**Psychological interactionism** – the complex interaction of **A**, **B**, and **C**. (Ellis, 1985).

**Rational beliefs** – those beliefs that are (a) probabilistic, not absolute, hence are flexible when new evidence appears; (b) pragmatic, take into account what will help an individual attain his or her goals; (c) based on reality as deducted from empirical observation; and (d) logical, making sense when logic is applied (Ellis, 2001; Dryden et al, 2003).

**Self-talk** – alternative term for “**Beliefs**” used mostly in third generation REBT and REBT self-help books (e.g. Clark, 2002). “Telling yourself,” on the other hand, consists of words that a person consciously goes over in his or her mind in order to change how she or he feels or thinks.

**Unhealthy negative feelings** – these feelings tend to exaggerate psychic pain and remain in the discomfort zone. Furthermore, they encourage the client to behave in a self-destructive way, impede a person in his or her pursuit of his or her goals, and lead to thinking that results in a further downward spiral (Ellis, 1994; Dryden, et al 2003).

**Urgentizing** – the demand and feeling by a client that everything has to be accomplished immediately (Neiders, 2007).
Acquired stuttering – as contrasted with “developmental stuttering” (the topic of this study). Acquired stuttering is the result of an insult to the brain such as trauma, stroke, disease, etc. (Hood, 1997).

Advertising – any and all methods that are used to inform the listener that the speaker is a stutterer. Specifically, the use of voluntary pseudo-stuttering is used by some systems of therapy to desensitize the client and inform the listener (Hood, 1997).

Affective reactions (also Affect) – the emotions that a person who stutters experiences before, during, and after the speaking situation precisely because he or she is apt to stutter. It is common for the speaker to have fear, panic, guilt, shame and/or feelings of denial both before and after the speaking situation. Before the speaking situation the most common feeling is anticipatory anxiety. During the situation there is also a temporary loss of contact with the self. Afterward the speaker feels ashamed and guilty about having stuttered (Hood, 1997). Some theoreticians think this approach-avoidance conflict is what propagates stuttering (Sheehan, 1978).

Airflow management – “A clinical approach wherein the stutterer attempts to integrate a long, relaxed, passive sigh with the slow initiation of the first syllable of a word in order to maintain air flow by reducing tension and pressure within the vocal tract” (Hood, 1997, p.15).

Approach-avoidance conflict – the conflict that arises when a stutterer wants to communicate but at the same time desires to avoid stuttering at all costs. This conflict may lead the stutterer to stuttering behaviors (Hood, 1997).
Articulators – the organs that modify the stream of voiced and unvoiced breath in meaningful sounds: the mandible, lips, tongue and soft palate (Hood, 1997).

Avoidance behaviors – anything that a stutterer does in order to avoid difficult sounds, words and situations. These behaviors include, but are not limited to postponements, substitutions of words, and circumlocutions (see below) (Hood, 1997).

Block – the closure of airflow at any of several locations: larynx, lips, etc. Although no sound is coming out, the listener is aware that the person is trying to speak (Hood, 1997).

Cancellation – the technique of repetition of the stuttered word after a short, deliberate pause. When saying this word again a different, more fluent technique of stuttering or deliberate speech is used (Hood, 1997).

Circumlocution – “Attempting to avoid a feared word or words by paraphrasing the intended utterance using different words. Explaining the word rather than using it” (Hood, 1997).

Chronic Perseverative Stuttering Syndrome (CPSS) – “Believed by some to result from a long history of multiple, coexisting factors that interact with affective, behavioral, and cognitive components of stuttering. For these persons, the hope of a “complete cure” and total remission of stuttering symptoms appears to be unrealistic. Nevertheless, these persons can learn to control and/or cope with their stuttering and become able to communicate effectively and successfully even in situations of extreme stress” (Hood, 1997).

Covert features – those behaviors of stuttering that are not observable. These include avoidances as well as emotions such as fear, guilt, shame, frustration and cognitions that are part of stuttering (Hood, 1997).
Desensitization – in current stuttering therapy this is usually accomplished through voluntary pseudo-stuttering (Hood, 1997).

Easy onset (gentle onset) – “Starting the voicing of a sound, syllable, or word at a slow, smooth rate. The duration of each syllable within a word is stretched for up to two seconds. The easy onset is relaxed, and produced without effort: also referred to as gentle onset” (Hood, 1997).

Fluency shaping – “Fluency shaping therapy is usually based on operant conditioning and programming principles; e.g., breath stream management, successive approximations, reinforcement of fluency targets such as fluency enhancing behaviors, etc. Some form of fluency is first established in a controlled stimulus situation. This fluency is reinforced and gradually modified to approximate normal conversational speech in the clinical setting. This speech is then transferred to the person’s daily speaking environment” (Hood, 1997).

Fricative – a speech sound produced by forcing the air stream through a constricted opening. The /f/ and /v/ sounds are fricatives. Sibilants (see definition below) are also fricatives. (Van Riper, 1963).

Modifying the stuttering pattern (stuttering modification) – “Refers to the stutterer changing what he does when he stutters. Clinicians suggest that the stutterer can deliberately change his or her stuttering behavior and learn to stutter in an easier manner. Clinical emphasis is reducing the overall severity of the stuttering rather than replacing it with fluent speech. In so modifying his stuttering pattern he learns to change his way of speaking and develop a style of talking which is less abnormal and free of excessive
tensing. A basic fact revealed by laboratory and clinical studies is that the behavior called stuttering is modifiable” (Hood, 1997, p.44).

**Overt behavior** – “Clearly visible and/or audible behavior. The opposite of covert” (Hood, 1997, p.47).

**Plosives** – speech sounds made by impounding the air stream momentarily until pressure has been developed and then suddenly released, as in “p,b,t,d,k,g.”(Hood, 1997).

**Precision fluency shaping** – “A program using easy breathing, easy onsets and then monitoring the beginning sounds/syllables of words. This involves beginning the sounds and syllables gently and elongating their production for as long as one or two seconds” (Hood, 1997, p.50).

**Prolongations** – when a sound is involuntarily prolonged during stuttering (Hood, 1997).

**Proprioception** – “A general term used to cover both kinesthesia (the awareness of bodily movement and position) and taction (the sense of touch and contact). Speech is apparently monitored both through auditory and through proprioceptive feedback” (Hood, 1997, p. 52).

**Prosody** – This term refers to the melody, inflection, stress and rhythm of speech.

Variations in stress and intonation are produced by changes in loudness, pitch and duration of individual sounds and syllables (Hood, 1997, p. 52).

**Pull-out** – within block change that precludes the block running its original course, but introduces voluntary control that alters the block first by removing tension, then by moving on (Hood, 1997).

**Repetition** – the repetition of a sound, syllable or word (Hood, 1997).
**Schwa vowel** – “An undistinguished, unstressed, neutral vowel sound that is the usual sound of the first and last vowels of the word “America,” but even shorter in duration. In stuttering, stress and duration may be more obvious, and related to the incorrect syllable production as in “puh-puh-puh-pin” (Hood, 1997, p. 58).

**Sibilant** – characterized by a hissing sound; noting sounds like those spelled with $s$ in this, rose, pressure, pleasure and certain similar uses of $ch$, $sh$, $z$, $zh$, etc. (Random House, 1983).

**Slide** – “Uttering the different sounds of a syllable with prolonged, slow motion transitions: moving slowly through the syllable or word. In the slide technique the stutterer prolongs slightly the initial sound and the transition to the rest of the word, keeping the release as smooth and gradual as possible, and maintaining sound throughout” (Hood, 1997, p. 61).

**Speech-language pathologist (SLP)** – “A person professionally educated in the assessment, prevention and treatment of disorders of articulation, voice, language and fluency” (Hood, 1997, p. 62). SLPs require a B.A. and M.A. in Speech and Language Pathology and have to pass a clinical competency exam.

**Struggle behavior** – “This includes a wide range of secondary or accessory behaviors performed by the stutterer in an attempt to escape from a moment of stuttering. Devices used to interrupt and release, involving excessive effort, tension, changes in pitch or loudness, and escape behaviors such as head-jerks, eye-blinks, arm movements and jaw jerks, etc.” (Hood, 1997 p. 64)

**Stuttering** – Stuttering is a communication disorder characterized by excessive involuntary disruptions in the smooth and rhythmic flow of speech, particularly when
such disruptions consist of \textit{repetitions or prolongations} of a sound or syllable, and when they are accompanied by emotions such as fear and anxiety, and behaviors such as \textit{avoidance and struggle}” (Hood, 1997 p.64).

\textbf{Target} – in fluency shaping the target behavior (goal) such as reduced articulatory pressure during a phone call (Webster & Poulos, 1989).

\textbf{Significance of the Study}

The significance of this dissertation is sixfold. First, it approaches the development of a therapy model from the biopsychosocial point of view. It is built on a well-defined epigenetic model of development and takes into account all the lifespan development issues and all the effects of accumulated traumatic events.

Second, the therapy model is theory–driven and based on a well-documented and researched REBT model that has been shown to be effective and efficient in over 300 studies. These studies include meta-studies by DiGiuseppe and Miller (1977), McGovern and Silverman (1984), Lyons and Woods (1991), Silverman et al (1992) and Engels et al (1993), a list of additional studies compiled between 1993 and 2001 by DiGiuseppe et al (2008) and scores of studies since then.

Third, it will provide a therapy manual that can be used for both treatment and research purposes. The last point is especially important in the managed care environment and the zeitgeist of Evidence Based Practice (EBP).

Fourth, the instructions to accompany the manual will be detailed enough to make the manual accessible for SLPs with minimum experience in counseling and no experience in REBT. Enough detail will be provided in both REBT and stuttering therapy
to make a psychologist effective and efficient in counseling the stuttering client, should he need a more intense therapy than can be provided by SLPs.

Fifth, the theoretical basis will be explained thoroughly enough with cited references so that further extension and refinement of the theoretical model will be possible. All the necessary terms will be operationally defined so that each axiom (or assumption) can be experimentally tested.

Sixth, the study provides the first two steps of a novel, disciplined approach toward change in the field of stuttering therapy. The first step, a well thought out comprehensive theoretical model of stuttering throughout the lifespan, will be a novel approach because it puts the individual in the center of the therapy process by not focusing on the speech forming musculature. Instead, it takes into account the whole CNS and endocrine system interactions. The second step, designing a manualized therapy, is necessary so that outcome experiments can be performed using the best statistical methodology and replicated by researchers. Also SLPs will have the necessary materials to gather data for Evidence Based Practice. Although the field of stuttering therapy may be undergoing a change, this approach will be an addition to that process.

In summary, this dissertation draws on research in psychology as well as in the field of stuttering conducted by SLPs. The theoretical model of how stuttering develops and how it is sustained or propagated into adulthood, as well as how the CPSS can be treated, will be designed to allow for discussion and further expansion and refinement by other theoreticians and practitioners. The study will promote scientific evolution in the field.
CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The literature on stuttering is vast. Many of the hypotheses about stuttering and treatments for stuttering were generated before the advent of statistical analysis of evidence and today’s standard of Evidence Based Practice. They were first published as chapters of books instead of peer reviewed journals.

Equally vast is the literature of third generation REBT, which is now over 50 years old. First generation REBT was called RET and was comprised of rather rigid therapy and theoretical concepts. Second generation REBT is defined by the latest developments in REBT that Albert Ellis best described in his 2001 book *Overcoming Destructive Beliefs, Feelings, and Behaviors: New Dimensions for Rational Emotive Behavior Therapy*. Third generation REBT is based on the second generation, but integrates concepts and techniques used by a number of other authors such as Norcross, Diclemente, and Prochaska’s (1994) *Changing for Good: A Six-Stage Program for Overcoming Bad Habits and Moving Your Life Positively Forward*, O’Hanlon and Weiner-Davis (2003) *In Search of Solutions: A New Direction in Psychotherapy*, Bertolino and O’Hanlon (2002) *Collaborative, Competency-Based Counseling and Therapy*, Greenberg and Paivio (1997) *Working with Emotions in Psychotherapy*, etc.

Many of the third generation REBT techniques were also first written as books, or chapters in books, before they were subjected to scientific studies. Therefore, the review
of the literature encompassed in these sources and this dissertation includes references that are not from peer-reviewed journals.

Symptomatology of Stuttering

During the past five decades of studying stuttering therapy, the dissertator realized that the treatments for the problem of stuttering depended on the conceptualization of the problem. The current state of the literature reflects the generally accepted term stuttering and a somewhat controversial concept of Chronic Perseverative Stuttering Syndrome (CPSS) (Cooper, 1993, Shapiro, 1999) that is also referred to as perseverative stuttering or chronic perseverative stuttering. Stuttering, as used in the SLP literature, focuses mainly on disfluency, whereas CPSS refers not only to speech disfluency but also to behaviors, attitudes, and emotions that are not stuttering, yet have evolved as a result of stuttering. CPSS includes everything that a person who stutters experiences and does as a result of having had, or of still experiencing, stuttering. Only by taking into account all the dimensions of CPSS can an all-inclusive treatment be formulated.

Definition of Stuttering

American Psychiatric Association Definition


Diagnostic criteria for 307.0 Stuttering

A. Disturbance in the normal fluency and time patterning of speech (inappropriate for the individuals age), characterized by frequent occurrences of one or more of the following:

1. sound and syllable repetitions
2. sound prolongations
3. interjections
4. broken words (e.g., pauses within a word)
(5) audible or silent blocking (filled or unfilled pauses in speech)
(6) circumlocutions (word substitutions to avoid problematic words)
(7) words produced with an excess of physical tension
(8) monosyllabic whole-word repetitions (e.g., I-I-I=I see him)

B. The disturbance in fluency interferes with academic or occupational achievement or with social communication.
C. If a speech-motor or sensory deficit is present, the speech difficulties are in excess of those usually associated with these problems.

**Coding note:** If a speech-motor or sensory deficit or a neurological condition is present, code the condition on Axis III” (p. 69).

**Differential Diagnosis**

It is important to understand that one must distinguish stuttering from other conditions that have similar symptoms. Monfrais-Pfauwadel (2003) presented an exhaustive classification of dysfluencies. The classification was summarized as a list, which contains all types of conditions that cause disfluencies, including stuttering and conditions that mimic stuttering. The list is as follows:

“Nosological classification of disfluencies
- stuttering
- spasmodic dysphonia
- dysarthrias
  - extrapyramidal dysarthrias
    - Parkinson's disease
    - Steele-Richardson-Olewski syndrome,
  - choreas and athetosis.
  - cerebellar syndromes and ataxias dystonias specially focal
  - volitional dyskinesias of intention
    - myoclonias of the larynx,
  - tics and Gilles de le Tourette syndrome
  - apraxias of speech.
  - anarthrias
    - Phonemic disintegration syndrome
    - word retrieval disorders in aphasias
  - substitutive phonations in a laryngeal speech
    - esophageal speech
    - tracheo esophageal speech
    - external vibratory devices for alaryngeal patients” (p. 19).
The conditions listed above can be diagnosed by a neurologist. The neurologist would have to also have a brief history of the onset of the client’s stuttering-like symptoms. An experienced SLP probably can also do a differential diagnosis most of the time and would only have to consult with a neurologist on a case by case basis.

This study is concerned with a particular type of stuttering called developmental stuttering which develops during the time when a child is learning to talk. It is necessary to differentiate it from neurogenic stuttering. Theys et al. (2008) define neurogenic stuttering as resulting from neurological disease. The most frequent causes are stroke, traumatic brain injury, and neurodegenerative disease. Some other causes, such as poisoning, may also lead to stuttering in rare instances. In general, anything that causes brain damage that gives rise to stuttering-like symptoms, but is not developmental stuttering, is called acquired or neurogenic stuttering. The best ways to establish differential diagnosis is by using various brain scans and a detailed history of the onset of stuttering. Theys et al (2008) also list six differential factors:

“(1) disfluencies occur on grammatical words nearly as frequently as on substantive words; (2) the speaker may be annoyed, but does not appear anxious; (3) repetitions, prolongations and blocks do not occur only on initial syllables of works and utterances; (4) secondary symptoms such as facial grimacing, eye blinking, or fist clenching are not associated with moments of disfluency; (5) there is no adaptation effect; and (6) stuttering occurs relatively consistently across various types of speech tasks” (p. 2).

Speech and Language Pathologists Definition

SLPs have not agreed upon a single definition of stuttering. Hood (1997), in the Stuttering Foundation of America, gives a number of definitions by various authors, but settles on the following: “Stuttering is a communication disorder characterized by excessive involuntary disruptions in the smooth and rhythmic flow of speech, particularly
when such disruptions consist of *repetitions* or *prolongations* of a sound or syllable, and when they are accompanied by emotions such as fear and anxiety, and behaviors such as *avoidance* and *struggle*” (p. 64). Bloodstein and Ratner (2008), in their authoritative sixth edition of *A Handbook of Stuttering*, add that there may also be changes “in the rate, pitch, loudness, inflectional patterns, articulation, facial expression, and postural adjustments” (p. 1).

*Stuttering Behavior Description*

Although psychologists have only published one paper on stuttering in the last forty years (DiLollo, Manning, & Neimeyer, 2003), stuttering as researched and practiced by SLPs has been influenced by Behavior Therapy. Throughout SLP literature in the past fifty years, SLPs have borrowed concepts and techniques, such as classical conditioning (Pavlov, 1927), operant conditioning (Skinner, 1965), desensitization (Wolpe, 1958), and behavior shaping (Bandura, 1969) from Behavior Therapy. These techniques have become incorporated in mainstream therapies called “stuttering modification” and “fluency shaping”. Thus, it is no surprise that the external manifestations of observable behaviors have been emphasized at the expense of other inner behaviors that cannot be identified by the observer (Smith & Kelly, 1997; Smith 1999). Many in the field agree (Bloodstein & Ratner, 2008) that stuttering does not, as yet, have an adequate, universally agreed upon, operational definition. Nevertheless, there is a body of literature that subscribes to five dimensions of observable behaviors which give, if not a comprehensive picture of stuttering, a good description of observable behaviors.
Frequency

One of the most frequently used measures of stuttering is the frequency of stuttered words or stuttered syllables. This supposedly straightforward measure is not without its academic controversies. The first controversy surrounds whether to measure numbers of syllables stuttered versus numbers of words stuttered (Yaruss, 2000). Cordes and Ingham (1999) proposed another measure based on judging whether a time-interval contains stuttering. Although there are controversies about the accuracy and inter-judge agreement on the frequency of stuttering, the frequency measurements appear to measure one dimension of stuttering within a reasonable degree of accuracy.

Duration

The mean duration of a stuttering block in seconds (usually measured from a recorded video tape) is another valid measurement of observable stuttering. Ratner and Bloodstein (2008), after completing a meta-analysis, concluded that there does not appear to be a correlation between the other dimensions of severity of stuttering and the mean duration of blocks in the general stuttering population.

Types of Disfluencies Regarded as Stuttering

The third variable frequently found in the stuttering literature (Guitar, 2006) is the comparative frequency of various types of disfluencies and whether these disfluencies are a characteristic of stuttering, or whether they are part of normal speech. Although, at least in isolation, there are no objective criteria to distinguish an instance of disfluency when viewed in isolation, the listener and the speaker can generally tell when a stuttering incident has taken place (O’Brian, Packman, & Onslow, 2004). Instead of specifying *ad nauseum* what constitutes a stuttering moment, Einarsdottir and Ingham (2005) have
suggested that listeners themselves be called upon to determine when stuttering has taken place.

**Speech Rate**

Speech rate, measured in words spoken per minute, has long been considered a possible dimension of stuttering (Barry, 2006). The person who stutters has a slower speech rate than normal speakers. Normal speakers speak at the rate of 162 to 230 syllables per minute or 115 to 230 words per minute (Andrews and Ingham, 1971). Shapiro (1999) observes that speech rate is inversely proportional to the severity of stuttering. Bloodstein (1944), using 30 adult male stutterers, found that their reading rate ranged between 42 and 191 words per minute, with the mean rate being 123 words per minute. In contrast, Williams, et al (1978) found that for normal adults the reading rate ranged from 148 to 190. Thus, we can conclude that the top of the scale yields significant difference, yet those who stutter more severely read significantly slower. With effective therapy and reduction of the overall severity of stuttering, the speech rate catches up to the rate of the normal speaker.

**Listener Subjective Rating of Severity**

With the advent of both tape recording and video taping, the adjudged rating of severity of stuttering has gained a standing of its own. Thus, the listener’s judgment of an instance of communication, as subjective as he or she may be, has been allocated a place in determining the severity of stuttering. This measure has the highest “face” validity and, given the advances in technology, can be used as a measure of severity of stuttering. Lickley, Hartsuiker, Corley, Russell, and Nelson (2005) investigated direct magnitude estimation, where a sample is assigned a standard for comparison and this standard (i.e.
10) is used to rate other examples of stuttering. The authors found that this is reliable. It is interesting to note that people who stutter themselves labeled more samples of speech disfluent than normal speakers.

**Conclusion**

In conclusion, frequency of stuttering, duration of stuttering, types of disfluencies, speech rate, and listener rating of severity of stuttering have been used to measure the behavioral aspects of stuttering. As far as documenting the outward characteristics of the speaker, these measures appear to be helpful in defining the severity of stuttering and progress during stuttering therapy.

**Moment of Stuttering: Physiological and Acoustic Description**

Many studies have been conducted on respiration, phonation, articulation, and muscular activity of muscles involved in speech formation and the airway. (For a summary, see Smith 1999) There are abnormal activities in all of the muscles involved in producing stuttered speech, including the larynx. The most salient aspect is the abnormal, excessive muscular tension. There appears to be forcing of air past self-obstructed passages, as well as collateral tension. However, Smith (1999) concludes that studying the abnormalities associated with speech is analogous to studying the lava flow in a volcano in order to understand the volcanic eruption. The cause lies deeper under the volcano in the tectonic movement of plates, the heat dynamics, etc. Consequently, although many studies have been performed on various physiological and acoustic measurements, these studies are considered irrelevant to either finding the cause of, or the solution to, the problem of stuttering (see Bloodstein & Ratner, 2008).
Secondary or Associated Symptoms

Although SLPs do not completely cover the psychological factors associated with long term stuttering, they have studied a number of these associated factors in detail. The following paragraphs give the current views on these factors supported by studies whenever they are available.

Visible or Audible Concomitants

Associated movements. Van Riper (1982, 1963) describes both the reason and the development of associated movements in advanced stuttering in adults. Through accidental eye blinks, grimaces, averted glances, snapping of the fingers, tightening of the body, and/or jerking of the head, the person who stutters manages to get the sound out. Even if the superfluous action is not directly associated with producing the sound, but is only a distraction, the central nervous system associates the final success of forcing the sound out with the concomitant behavior, thus, reinforcing it. At the beginning, the gestures and abnormalities are more or less within reasonable social limits. The severe stutterer uses more and more extreme mechanical motions until, at least in some adults, they truly become bizarre.

Interjected speech fragments and circumlocution. Manning (2001) describes the phenomena where the person who stutters, in order to avoid or postpone tackling a feared word or sound, either interjects a filler word such as “well,” “you know,” “er,” etc. in the speech stream, or when asked what country he or she is from starts with a phrase “a small country in northern Europe” (a typical circumlocution).

Vocal abnormalities. Vocal abnormalities that are encountered are monotone pitch; high, low, or abrupt changes in pitch; slow or fast rate; continuous pitch; and even
suspended phonation, in order to prevent stuttering being heard. The research quandary exists here because, as Bloodstein and Ratner (2008) point out, both “stuttering modification” and “fluency shaping,” the two most popular stuttering therapy techniques, employ various facets such as “easy onsets” and “continuous phonation” as part of the therapy regimen. Helliesen (2006), for example, stresses the modification phase of stuttering therapy. However, there is only a limited number of ways to modify one’s speech. Further detailed discussion on the usefulness and danger of speech-modification will be found in the therapy manual part of this dissertation. For the time being, let it be said that the dissertator believes that it is not how the speech is modified, but for what purpose the speech is modified, that determines whether or not it helps the person who stutters communicate better, or whether it is detrimental because it builds up further unwarranted anxiety about stuttering that—at best—ends in a condition called “covert stuttering.”

Other visible physical reactions. The listener or communicator may also observe that the speaker who stutters may become flushed, pale, or sweat profusely. These are the visible aspects of physiological reactions which are discussed next.

Physiological Concomitants

There can be no sharp line drawn between the physiological concomitants and visible and audible concomitants discussed above because the aforementioned signals usually have a physiological aspect involved. This section will focus on those unobservable, physiological concomitants that have no readily available mirror image in the visible or audible sphere. Special instrumentation is required to establish their presence.
Cardiovascular phenomena. The research on whether the blood flow to certain areas of the body, blood pressure, and heart rate are altered by stuttering has been inconclusive. The common knowledge that both blood pressure and heart rate increases has been challenged by Alm (2004), who established the idiosyncrasy of this phenomenon.

Cortical activity. The recent development of positron emission tomography (PET) and other similar technologies has established that there are differences in brain activity between normal speech and stuttered speech (Ingham, et al., 2000). The authors imply that talking and stuttering may be tied to anxiety, but no distinction could be made whether this is due to merely talking or due to stuttering. The most significant development was that similar patterns were observed when the stuttering was imagined. The authors concluded that no overt stuttering was necessary to produce a change as long as the subject imagined stuttering [sic].

Using Positron Emission Tomography (PET), DeNil (2000) found that during silent reading the stuttering subjects showed increased activation in the left anterior cingulate cortex leading him and other researchers to suggest that the stutterers showed a cognitive, anticipatory reaction. Ingham et al. (1996) used PET acquisition scans and MRI data to accurately identify regions of interest in speech formation. The results showed that there are no anatomical or functional brain lesions in stutterers that would account for stuttering.

Healey and associates (2008) at the University of Nebraska have collected visual data to indicate differences in brain activation in scans during the various phases of speaking by stutterers and non-stutterers.
Galvanic skin response, biochemical changes, reflex measurements. Early studies of these phenomena revealed no distinctive patterns that could be associated with the etiology of stuttering (Bloodstein & Ratner, 2008). Bloodstein and Ratner (2008) concluded that the reason these studies have gone out of favor is that the physiological reactions are thought to be a) the result of overt symptomatology, and b) these symptoms are also thought to be present in normal speakers who, for example, are afraid of public speaking.

Introspective Concomitants

Introspective concomitants are the subjective evaluations that accompany an overt stuttering experience. Bloodstein and Ratner (2008) state that, in their opinion, these are exceedingly important and consist mainly of evaluations of three types that have been obtained through the introspective reports of adult stutterers. The three types are: (1) feelings of frustration, (2) feelings of muscular tension, and (3) affective reactions.

When the stuttering literature refers to introspective concomitants, it stresses that these are subjective and not able to be measured. This conclusion is only partly true; with new brain imaging techniques being developed and enhanced daily, these internal events may soon be measurable.

Feelings of frustration. The person who stutters experiences what appears to him or her as a series of moments when they are “physically” stuck. At least their interpretations of the moment of stuttering is in terms of “tongue being stuck to the roof of my mouth,” “my throat was stuck,” etc. This type of description is an artifact of the lack of sophistication of the person who stutters. The observing SLP, who has been educated in behavior therapy, often lacks the vocabulary of the cognitive aspects of
emotions and cognition as precursors to behaviors as postulated by modern CBT and REBT and, thus, does not offer the client a menu of possible self-talk options to choose from. In addition, the stuttering literature is devoid of the concept of low tolerance of frustration. This absence of the concept of being able to tolerate frustration and, hence, being able to put it into words, only exacerbates the feelings of physical frustration (A. Ellis, personal communication, June 1967.).

Muscular tension. The person who stutters reports, rightly so, that he or she is aware of a feeling of muscular tension. The focus and awareness of this tension tends to vary from person to person. Most frequently, it appears to be primarily focused in the vocal tract (Manning, 2001) (larynx, throat, lips and tongue) but also in the chest, abdomen, and jaws. No exhaustive and differential studies of this phenomenon have been found, although discussion in the literature is replete with its description and ubiquity without quoting any scientific studies.

Affective reactions. Before affective reactions are discussed, it is necessary to understand the two types of stuttering. One is overt stuttering which results in observable phenomena; the other is covert stuttering. Covert stuttering is defined as the result of the stutterer using every means available to avoid observable stuttering. Throughout the modern stuttering literature the term stuttering is mainly associated with overt stuttering. Covert stutterers do a credible job of hiding their stuttering or at least convince themselves that they are able to do so. The correspondence and literature of consumer groups frequently refer to covert stuttering (Meyer & Provus, 2007; Grommen, 1999; Wimpee, 2005). Covert stuttering is addressed less frequently by professionals. In fact, all the recent books in stuttering therapy (Guitar, 2006; Shapiro, 1999; Yairi & Ambrose,
Covert stuttering comes about when a speaker who stutters, or has a tendency to stutter, scans ahead and anticipates stuttering on a given word or in a given situation. Because of the fear of stuttering, the person may choose to use substitutions, interjections, circumlocutions, and avoidance of the situation to prevent overt stuttering. Some people are successful at this; others only manage to stutter more and more severely (Sheehan, 1970). In all instances, the person who stutters experiences affective reactions. When examined more closely, there appear to be different emotions associated with disfluency depending on the relative time periods with respect to the disfluency. Thus, before the disfluency, anxiety and fear are usually felt. During the disfluency there is a feeling of confusion, helplessness and even panic. In extreme cases there has even been a loss of awareness associated with panic (petit mort). Feelings after the disfluency include shame, guilt, frustration, anxiety about further stuttering, exasperation, and embarrassment. Although these feelings are mentioned in most modern textbooks on stuttering, no systematic studies appear to have been performed. For example, no studies were found to have used the CBT or REBT framework of cognitions preceding these emotions. The self-perceived struggle of stuttering has been also recorded in drawings by

**Attitudes**

*Introduction*

Ellis (2001) stipulates that dysfunctional habits are perpetuated by irrational thoughts. Using deductive logic, it can be postulated that the irrational attitudes of the person who stutters perpetuate CPSS. Some of the major dysfunctional attitudes of people who stutter include beliefs: a) that stuttering is shameful (Murphy, 1999); b) that the act of speaking is threatening and unpleasant (Sheehan, 1970); c) that one should feel guilty about not being able to talk fluently (Jezer, 1999), d) that people who stutter are innately unable to speak fluently (Jezer, 1997); e) that others who do not have a stutter are without any fears or disfluencies (Manning, 2001; Shapiro, 1999); and f) that the listener cannot understand the predilection of stuttering and is either critical or pitying, as well as impatient and critical, when he or she encounters someone who stutters (St. Louis, 2007). This leads the person who stutters to approach the problem in self-defeating, ineffective ways, including avoiding mentioning the problem, rather than discussing it openly and honestly with people near to them (A. Ellis, personal communication, September 1987.).

*Research*

*Research about stuttersers.* Murphy (1999) found that adults experience a high degree of guilt and shame about their stuttering. In a study of 200 adults who stutter, Klein and Hood (2004) showed that 20 percent turned down promotions or better jobs due to their stuttering, 33 percent believed that stuttering negatively influenced their job
performance, and 70 percent felt that their career options were limited because of their stuttering. Critchton-Smith’s (2002) research showed that people who stutter become isolated and feel that they are being limited by their stuttering.

*Research of listener reaction.* Lest the reader starts to believe that persons who stutter are innately predisposed to self-persecution without cause, it is important to note that listener reactions are an integral part of the stutterer’s developmental story. Hugh-Jones and Smith (1999) found that children who stutter tend to be more bullied and socially isolated than those who don’t stutter. The listener who only occasionally comes into contact with stuttering concludes (Craig, Tran, & Craig, 2003) that the person who stutters is either exceedingly shy, overanxious, or both. The good news is that those who are familiar with a person who stutters (Klassen, 2002) have a more positive reaction toward stuttering and the person who stutters. Thus, Klassen (2002) concludes that education of the public should yield beneficial results. Some people who stutter hold a more negative view of others who stutter than those without this problem.

*Measured anxiety.* The Kraaimat, et al. (2002) study revealed that half of the subjects who stuttered achieved scores on social anxiety scales within the range of psychiatric clients. Ezrati-Vinacour and Levin (2004), in a study of 94 adult males who stutter, observed elevations in both the state and trait anxiety. In speech related situations, the person who stutters displays significantly higher anxiety than the control group of non-stutterers (Messenger, et al., 2004).
Irrational Thoughts and Self-Talk

Various authors (Neiders, 1999, 2007; Schwartz, 1999; Manning, 1996; Bloom and Cooperman, 1999) mention that irrational or self-defeating cognition, or self-talk, plays an important role in propagating stuttering and/or impeding the stuttering process. Furthermore, Neiders (2007), Webster and Poulos (1989), Logan (1999) and Schwartz (1999) give specific irrational ideas and self-talk that are the culprits in propagating stuttering. The main principles that exacerbate stuttering are the demands that a person places on himself or herself to speak perfectly and concluding that he or she has less self-worth than someone who does not stutter. Other self-talk that inhibits progress consists of: a) damning himself or herself for not progressing and becoming a fluent speaker, b) believing that it is too hard to work on speech therapy, c) having the need for approval from all other people, d) “awfulizing” about stuttering, and e) believing that fluency is an all-or-nothing proposition (one either is fluent or not, and incremental progress is of no value).

Incidence and Prevalence

Incidence

Incidence of stuttering signifies that a given person has stuttered some time in his or her life. Bloodstein and Ratner (2008), after a thorough examination of all the available studies, state that the incidence of stuttering is between four and five percent. Yairi and Ambrose (2005), the authorities on longitudinal studies of early childhood stuttering, make a case that if children who had shorter periods of disfluencies are included, the number might well be considerably higher. Andrews and Harris (1964) and
Mansson (2000) found in their studies that the incidence of stuttering is about five percent in the general population.

**Prevalence**

Prevalence is a measure of the percentage of people who stutter at a given point in time. Andrews and Harris (1964) and Mansson (2000) found prevalence to be about one percent. In their meta-survey of published data, Bloodstein and Ratner (2008) found slightly less than one percent of the population in the United States stutters, whereas in Europe the number is slightly more than one percent.

**Recovery**

The above relationship between incidence and prevalence agrees with the well-constructed longitudinal study to date conducted by Yairi and Ambrose (2005). The study found that 79 percent of children recover from stuttering. Recovery includes children who did and did not receive treatment. The recovery rates for those receiving therapy and those not receiving therapy differed in the following aspect: “none [italics in original] of the children who were later identified as recovered received therapy for their stuttering. On the other hand, 17 of the 19 who eventually persisted received therapy for their stuttering.” (p. 166) Thus, it is obvious the direct therapy of children needs to be revisited and new, better therapies designed. However, this is out of scope of this dissertation.

Bloodstein and Ratner (2008) put the recovery rates at 80 percent. The studies included both those who received therapy and those who did not. Although most of recovery happens during childhood, a number of adults also recover from stuttering. Finn and Felsenfeld (2004) studied these individuals who recovered and found the major factor in their recovery was that change was characterized by self-guidance and self-reliance. In
a study by Anderson and Felsenfeld (2003) it was determined that half of the persons who recovered had a slight tendency to stutter later.

*Frequency of Stuttering in Males versus Females*

After compiling all the data in studies of stuttering frequency and prevalence, Bloodstein and Ratner (2008) came to the conclusion that approximately three times as many male as female subjects stuttered. Manning (2001) agrees with the proportion of male to female stutterers.

*Correlative Factors Affecting Stuttering*

*Positive Family History of Stuttering*

The fact that stuttering tends to run in families is well established (Yairi and Ambrose, 2005). Andrews et al. (1983) studied the incidence of stuttering in first-degree relatives and found it to be three times as high as in the population in general. Buck et al. (2002) took a sample of 61 children who stutter and determined that 72 percent had relatives who also stuttered. Yairi and Ambrose (1992a, 1992b) found that two-thirds of their sample of nearly 90 stuttering children had family members who stuttered.

*Discussion of Genetic versus Environmental Factors*

Before the role of genetic and environmental factors can be discussed, a framework for the discussion must be established. Yairi and Ambrose (2005) chose the epigenetic system theory of development framework. The dissertator believes this is an appropriate choice.

The epigenetic system theory of development (Dent-Read & Zukow-Goldring, 1997; Goldsmith et al., 1997) proposes that humans develop their individual traits based
on the interaction of genes with the environment. The epigenetic system theory adapted from Berger (2001) traces the steps in development as follows:

1. Species genotype, the ancestors’ genes, are passed on through natural selection to each individual genotype, the genes present in a zygote at conception. Genotype is defined as “[a] person’s entire genetic inheritance, including genes that are not expressed in the person” (Berger, 2001, p.77). There are some genes that are shared among all humans and other genes that are unique to an individual (except in the case of monozygotic twins, triplets, etc.). The unique set of genes is called an individual genotype.

2. The individual genotype is subjected to a pre-natal environment of toxins, nutrition, and stress. Some genes become stronger while others become weaker. Clustering of genes may occur to make various combinations.

3. The genetic potential at birth is subjected to the environment during infancy. The factors include, but are not limited to, toxins, nutrition, stress, emotion, vitamins, climate, learning, experience, and encouragement. All genes are influenced by the environment. Some genes, again, are made stronger or weaker.

4. Individual phenotype has been formed. Genes are expressed in childhood and throughout the lifespan. Phenotype is “[a]ll the genetic traits, including physical characteristics and behavioral tendencies that are expressed in a person” (Berger, 2001, p. 77).
The prefix *epi*- is used to emphasize that although genes are important, they are not the sole boundary. Traits are the result of environmental factor and genetic inheritance (genotype) interaction. Polygenic traits are traits that are based on more than one gene. Multifactorial traits are those that, besides having a genetic basis, have been influenced in their development by the environment. Stuttering is one of the many traits that make up a phenotype. Yairi and Ambrose (2005) classify stuttering as phenotypic.

The topic of this section is to weigh the evidence whether the trait of stuttering is a multifactorial trait or whether stuttering is a polygenic trait. If stuttering were purely determined by genetic factors, then the studies of concordance of stuttering among monozygotic twins would have to be 100 percent. Such is not the case. Howie (1981a, 1981b) found that the concordance rate for monozygotic twins to be 63 percent. Felsenfeld et al. (2000) found 45 percent of monozygotic twins to be concordant. However, Felsenfeld et al. (2000) and Howie (1981a, 1981b) found the concordance between monozygotic twins and dizygotic to be 45 percent and 15 percent concordant, and 63 percent and 19 percent concordant respectively, thus establishing a clear case that genetic factors have a very strong influence on stuttering.

Bloodstein and Ratner (2008) confirm that there are both genetic and environmental factors involved in the development of stuttering. So far, no precise genetic or environmental factors have been isolated.

**Different Theories of Etiology**

It would indeed be valuable to know how a person becomes a person who stutters and what precipitates the moment of stuttering. A valid theory would inform the development and practice of an effective therapy. It may also indicate whether there is a
cure for the cause of stuttering or whether we can only presently treat the effect or symptoms. The search for etiology has been the holy grail of stuttering studies for decades. Innumerable papers and book chapters have been published on this topic (Bloodstein and Ratner, 2008). However, Packman and Attanasio (2004) in *Theoretical Issues in Stuttering* unequivocally demonstrate that none of the current theories of etiology can be substantiated by any experimental data. Stuttering, as an objective of research, has not had the terms defined in such a way as to yield to theories that can be falsifiable, nor is there any agreement among scientists in the field about what stuttering is. Thus, the only conclusion is that the field exists in a pre-paradigm state (Kuhn, 1962). Bloodstein and Ratner (2008) discuss the historical development of competing theories of the etiology of stuttering (what makes an individual a person who stutters) and the cause of the stuttering moment (what triggers and sustains the actual stuttering). Their approach is mainly from the historical point of view culminating in the current versions of the competing theories. Packman and Attanasio (2004) have taken the seven most popular “theories of stuttering” and scientifically dissected the assumptions and shortcomings of each of the theories. It is beyond the scope of this dissertation to reproduce these discussions. Two models of etiology and cause, however, appear to be promising in the study of CPSS. Conture et al. (2006) discuss the stuttering phenomena in a comprehensive manner when they separate the distal (etiology) factors and the proximal (triggering and sustaining) causes of stuttering. They draw on a wide range of studies in the area of linguistic immaturity, genetic factors, the temperament of the speaker, and environmental factors. Under temperamental factors they include low frustration tolerance, eagerness to please, being overly sensitive to the environment, having
perfectionistic standards, a tendency to be anxious and fearful, and the trait of dependency. The environmental factors include competitive sibling relationships, demands placed upon the child by caretakers in the environment, and identification with models of linguistic superiority beyond their reach. Guitar (2006) argues that separate genetic/environmental factors, as expressed in the person who stutters, cause primary and secondary stuttering. Secondary stuttering is dependent on personality traits, whereas primary stuttering has linguistic immaturity as its cause. Unfortunately, neither of these models have incorporated the intermediate cognitive variables, which play a predominant role in modern psychology. Another interesting theory of stuttering is proposed by Logan (1999). His limbic model starts with an assertion--proved by LeDoux (1993a, 1993b)--that once emotional memories and responses are classically conditioned they are virtually indelible. Furthermore, the model Logan (1999) proposes is based on Halgren’s (1992) observation derived from a number of studies that show that the amygdala receives both the visceral and cognitive inputs. The amygdala then evaluates these inputs before they enter our consciousness and are evaluated cognitively. In Logan’s (1999) model the following steps take place to cause stuttering:

1. The subject approaches a speech situation.

2. The limbic system evaluates the internal and external stimuli associated with the oncoming speech situation.

3. If a pattern of stimuli are present that evoke fear for that given individual in this speaking situation, a conditioned fear response and an emotional reaction is generated.
4. The emotional response is transmitted to the areas of the brain that are associated with speech formation.

5. Due to kindling, some paths of fine speech motor coordination are overactivated and the motor speech planning and initiation are interfered with.

6. This results in the oscillations (i.e. repetitions that are called clonic blocks) or complete fixation (i.e. closure that are called tonic blocks). These two are the two visible/audible elements that make up primary stuttering.

7. The individual responds, struggles, and secondary behaviors are observed. “The secondary behaviours, especially, are seen as instrumental behaviours, each of which over time comes to be chained to the next. These behaviours then act as cues for continuation of the inappropriate motor responses that result from the conditioned fear response and a learned cycle is begun” (Logan, 1999, p. 79).

8. “This learned limbic-originated fear response is indelible. It may be modified by time and/or treatment but remains as a part of the individual’s repertoire of learned emotional responses to the environment” (Logan, 1999, p.79).

9. The failure of the individual to talk fluently influences the person’s belief system. He or she labels himself as a “stutterer.” The person comes to believe that speaking for him or her is both fearful and nearly impossible. These failures in fluency reinforce the individual’s beliefs. A vicious circle, even a downward spiral, has been started that is self-reinforcing and feeds on itself. Ellis (A. Ellis, personal correspondence, April, 1987) stated that 1) the person, by labeling himself or herself, further evaluates himself or herself as a total failure; 2) he or she evaluates the situation as awful (more than 100 percent bad and as something
that should not be); 3) the person then convinces himself that he or she cannot stand it and proceeds to use all types of avoidance tactics; 4) completely convinces himself or herself that stuttering is something he or she cannot do anything about; and 5) should be forever panicked about speaking situations.

Logan’s (1999) model may not encompass all the variables, but it does show the pathway to how cognitively stored elements are incorporated in the generation and sustaining of the moment of stuttering.

*Early Stuttering and Normal Disfluency*

Although this dissertation deals with CPSS in adults and older adolescents, it is necessary to mention the concept that all disfluency is not stuttering, even though stuttering may well evolve from normal disfluency. In other words, as a child begins to talk he or she at first babbles, then repeats meaningful sounds like “ma-ma” or “da-da.” Next he or she graduates to hunting for words, pausing, repeating and otherwise being normally disfluent. He or she may even have some struggling, and he or she may stutter with both clonic and tonic blocks that, over time, become more severe. Finally, he or she may graduate to avoidance and other secondary stuttering behaviors. The end result is a classic case of CPSS.

The importance of this visualization of the stuttering progression is that--by using the principle of symmetry--the way, or path, of how a person got into the complex problem of CPSS of stuttering should point to a way for the person to get out of all the complications of stuttering by merely retracing the steps. For example, Logan’s model above shows us a map of how a person became a person with CPSS. Using that as a reverse guide may show the consequent path to recovery from CPSS. At either end of the
spectrum there will be, in theory, a mixture of early (or mild) stuttering and normal disfluency. Thus, if after therapy the client encounters normal disfluency, he or she should not become alarmed, but take this phenomenon in stride. For further discussion on early stuttering and normal disfluency the reader is referred to Bloodstein and Ratner (2008) *A Handbook on Stuttering*.

It is interesting that Van Riper (1973) noted that some speakers are “stuttering normal speakers.” “They have no fears, no struggling, no awareness of their interruptions and others do not think of themselves as stutterers (Van Riper, 1973, p.212) despite their considerable disfluencies.”

Physical Findings about Stutterers

*Introduction*

Innumerable studies between stutterers and fluent persons have been made trying to find the sufficient and necessary characteristics for a person to be a stutterer. These have ranged from studying the brain with modern scanning techniques to measuring motor abilities. The following paragraphs deal with developmental stuttering, the subject of this dissertation, not adult or childhood acquired stuttering, also called neurogenic stuttering, which is the result of lesions or neurodegenerative disease. (Acquired stuttering is out of the scope of this dissertation. To learn more about acquired stuttering the reader is referred to DeNil et al. (2007) and Boscolo et al. (2002).) If the necessary and sufficient conditions for stuttering can be found, then it might be possible to improve prevention, cure, or treatment of stuttering based on these findings.
Brain studies

Brain Areas and Structures Involved in Speech Production

A detailed exposition of the brain areas, structures, and functions of language processing is out of the scope of this dissertation because the study of brain areas and structures using modern scanning techniques is in its infancy, with no necessary or sufficient conditions for stuttering established. However, in order to understand some of the research quoted, an elementary understanding of our knowledge of the brain and language is required.

According to Kolb and Whishaw (2003), the current knowledge of where and how language is processed is based on four sources: (1) brain-imaging, (2) anatomical designations of regions or structures, (3) lesion studies, and (4) direct stimulation of the brain. There are various ways of describing the regions in the brain. Brodmann’s areas designated by numbers are currently used as a de facto standard although some named areas such as Wernicke’s and Broca’s areas are also used.

Kolb and Whishaw (2003) state that the Wernicke-Geschwind model of the neurology of language is one model of language processing that has been used in research. The three parts of the model are:

1. A word is heard. It passes through Brodmann’s area 41 (see above). In Wernicke’s area the word is compared to the sound images and the meaning is established.

2. To speak, the following sequence of events take place. A cognition takes place to say something. This cognition is sent to Wernicke’s area, then to Broca’s area where morphemes (the smallest meaningful units of words) are assembled.
Broca’s area assembles the instructions to the facial muscle motor neurons and sends them to the brainstem. The muscles then perform the functions necessary for speech.

3. When reading takes place, the written word passes through Brodmann’s areas 17, 18, and 19 to area 39. Visual processing takes place in these areas. Wernicke’s area then interprets the words. Broca’s area is involved for reading aloud.

Use of brain imaging has given us a more complex view of language processing.

“Language is probably organized in networks that connect both sensory and motor representation of words…Note that, if a word contains visual content, the web includes visual areas of the brain, whereas, if it contains motor content, the web includes motor areas. Any web will also include nodes within primary and secondary auditory areas as well as nodes within primary and secondary regions,” (Kolb and Wishaw, p. 501).

Much of the imaging research consists of two parts, first establishing where the activity is taking place and then establishing latency or amplitude measurements. The more advanced research is described in terms of Brodmann’s areas as well as the laterality of the brain.

*Some Basic Studies of Brain and Listening Dominance*

The study of the brain brings better understanding of the causes of stuttering and its treatment. There are several brain scanning methodologies and a number of studies in the scientific literature that refer to stuttering. Before proceeding with the state of the art methodology, the more mundane studies and results will be discussed. Many historical studies have been based on the hypothesis that persons who stutter had reversed brain dominance from those who do not stutter. One such area of study was based on the
hypothesis that people who stutter tended to be left-handed. This particular theory was disproved by a number of studies including Ardila et al. (1994). Another theory is that stutterers have shown a different ear preference for dichotic listening. Newer studies by Blood and Blood (1989a) and Blood and Blood (1989b) and Foundas et al (2004) found the evidence to be inconclusive.

_Electroencephalography (EEG)_

Electroencephalography has long been used to study brain wave measurements. Most of the results have been inconclusive when taken as a whole. However, Wells and Moore (1990) found that alpha waves were suppressed by people who stutter. Ozge et al. (2004) hypothesized that there was a delayed maturation of the frontal lobe, since their data indicated that alpha wave frequency was decreased, and delta wave activity was increased in stutterers.

_Event-Related Potentials (ERP)_

Recently, event–related potentials (ERPs) have been successfully used to study differences between individuals with stuttering (IWS) and normal speakers (NS) in the processing of speech and language stimuli. ERPs as contrasted to the similar EEGs show tracings that are more finely time-locked to sensory or cognitive and motor events or processes. In summary, the ERPs provide indirect information as to the site of cortical activity, the polarity of charge, how long it takes the brain to respond to a task or stimulus, and the strength or amplitude of the response. “They do not appear to be under conscious control, and so presumably [the ERPs] can tap basic aspects of the brain’s response to external stimuli and task demands” (Bloodstein and Ratner, 2008, p. 135).
Khedr, et al. (2000) used ERP together with EEG. The over-all response was slower as well as more asymmetric in the stuttering population. The findings suggest that there is a biological basis for stuttering. Likewise, Weber-Fox et al (2004) in studying ERP under various stimuli concluded that,

“[a]dults who stutter and those who are normally fluent exhibited similar phonologic processing as indexed by ERPs, response accuracy, and RTs [reaction times]. However, longer RTs for adults who stutter indicated their greater sensitivity to the increased cognitive loads imposed by phonologic/orthographic incongruency. Also, unlike the normally fluent speakers, the adults who stutter exhibited a right hemisphere asymmetry in the rhyme judgment task, as indexed by the peak amplitude of the rhyming effect (difference wave) component. Overall, these findings do not support theories of the etiology of stuttering that posit a core phonologic-processing deficit. Rather we provide evidence that adults who stutter are more vulnerable to increased cognitive loads and display greater right hemisphere involvement in late cognitive processes,” (p. 1244).

In a 2003 ERP study, Cuadrado and Fox asked individuals who stutter [IWS] to perform timed grammaticality judgments. Their findings indicated that “[t]he behavioral and ERP results are consistent with the hypothesis that underlying mechanisms mediating language processing, including those related to postlexical syntactic reanalysis, may operate atypically in IWS even in the absence of speech production demands” (p. 960).

Furthermore, Weber-Fox [2001] studied language processing by having the IWSs read sentences silently.

“The ERPs were elicited by: (a) closed-class words that provide structural or grammatical information, (b) open-class words that convey referential meaning, and (c) semantic anomalies (violations in semantic expectation). In standardized tests, adult IWS displayed similar grammatical and lexical abilities in both comprehension and production tasks compared to their matched, normally fluent peers. Yet the ERPs elicited in IWS for linguistic processing tasks revealed differences in functional brain organization…The overall pattern of results indicates that alterations in processing for IWS are related to neural functions that are common to word classes and perhaps involve shared, underlying processes for lexical access,” (p. 814).
**Brain Imaging Studies: Positron Emission Tomography (PET) and functional Magnetic Resonance Imaging (fMRI)**

Ingham (2003) and De Nil et al. (2003) have noted that in their research, and in the research by other workers in the field, there are differences in brain activation patterns between those who stutter and those who do not. Different researchers report different activation patterns in different brain areas. The interpretation of the differences between normal speakers and persons who stutter is neither simple nor yields to any obvious hypotheses. Both of the authors admit that the research is in its infancy. For example, it is not yet determined whether the differences are due to stuttering or to the stutterers’ attempt to manage his or her stuttering.

Bloodstein and Ratner (2008) agree with the above authors that there is a difference in brain activity of stutterers and fluent speakers. The interesting conclusions are that these differences, although not consistent from study to study, are present even when a person who stutters is listening to the spoken word. They also observe that evidence is starting to indicate that there may be structural differences between people who stutter and those who do not. However, more research needs to be done in this area as well.

**Motor Abilities**

Some studies of motor abilities have been performed. For example, using twelve matched pairs of adults, Jones et al. (2002) found that in tasks that involve visual-motor coordination the stutterers tended to be somewhat deficient in dynamic visual perception, reaction time, and tracking accuracy. It is notable that the severity of stuttering caused the differences to be more pronounced.
However, a meta-analysis of manual skills, performed by Bloodstein and Ratner (2008), found that the results were inconclusive. The authors discovered no correlation between stuttering and any of the manual skills that had been investigated. The meta-analysis included over 30 studies from 1928 through 2006. The manual skills tested ranged from strength, steadiness, speed, and regularity of repetitive movements to accuracy of reproduction of temporal patterns, hand-eye coordination, and psychomotor serial discrimination.

*Fluent Speech of Stutterers*

A plethora of studies of so-called fluent speech of stutterers was found. Upon closer analysis Bloodstein and Ratner (2008) found that this type of research was based on shaky grounds. To wit, it is impossible to tell whether a fluent sounding interval of speech by a person who stutters is truly fluent speech or whether the words are so minimally impacted by the stutter that the listener cannot tell that the word was stuttered.

*Specific Speech Motor Abilities*

The ingenuity and persistence of stuttering researchers has to be admired when considering the cause of stuttering being in the musculature of speech formation, specifically the larynx. This is probably the result of historical accident in that physical language formation was more readily observable than central nervous system functioning. Bloodstein and Ratner (2008), who have done a thorough meta-study of this literature ranging over four decades, summarized their findings as follows: “We are led to conclude that there is little evidence that abnormal functioning of the larynx has any sort of primacy in stuttering behavior, nor is it clear what form such evidence could take” (Bloodstein and Ratner, 2008, p. 175).
Neurotransmitter Levels

Wu et al. (1997) found that in pursuing different cortical activity levels in people who stutter, as shown on brain scans, there appears to be an increase in the level of dopamine activity in stutterers. This could be attributed to genetic factors. As a result, investigations have been performed for finding a chemical cure for stuttering.

Conclusions of Physical Findings

Although studies of families and twins suggest genetic components of stuttering, no specific physical manual skill or speech motor ability has yet been conclusively isolated to act as a physical marker for either a sufficient or necessary condition for stuttering to be expressed. The brain functioning studies are in their infancy, and although some differences between stutterers and non-stutterers have been found on a statistical basis, no sufficient or necessary conditions for stuttering to be expressed have been discovered. However, this does not mean that at some time in the future such physical markers will not be found.

Psychological Findings

Environmental and Developmental Aspects

Much about early stuttering development and environment has been garnered from the Illinois longitudinal study of early childhood stuttering. The principal investigator was Ehud Yairi. After publishing a series of papers (Yairi & Ambrose, 1992a, 1992b; Yairi et al., 1993), Yairi co-authored a book with Nicoline Ambrose called Early Childhood Stuttering: For Clinicians by Clinicians (2005). In summary, he and his co-workers found that there are few differences in environmental and developmental aspects of children who stutter and those who do not, with a few exceptions. Based on
correlational data, Yairi (1997) stipulates that even though the parents may not have obvious neurotic or psychotic problems, they frequently appear to be overly-concerned about their children, leading them to be more anxious and overprotective. Another problem is that the parents of children who stutter tend to negatively evaluate their children’s personalities, often ascribing anxiety-related traits to them. Moreover, the children seem to be aware of their parents’ views of them. Yairi (2005) also notes that the children who stutter seem to begin talking later than those who do not. The final difference observed by Yairi and his co-workers is that children who stutter seem to have more trait and state anxiety than those who do not stutter.

**Linguistic Skills**

Yairi (2005) noted the delay in mastering language skills in children who stutter. Other researchers have found that, subjected to standardized language tests, children who stutter performed less well in the areas of articulation, vocabulary, and other language measures including spontaneous language usage (Bernstein Ratner & Silverman, 2000; Miles & Bernstein Ratner, 2001; Silverman & Bernstein Ratner, 2002).

**Lexical Skills**

A number of studies have shown deficiencies in lexical skills in both children and adults who stutter. Thus, Pellowski and Couture (2005) found priming effects in children who stutter to be less effective. Priming refers here to presenting a semantically related object or word before requiring the subject to name the next item. Thus, the word “bean” could be used to prime “pea.” In normal children, the effect is that given priming, the child is able to name the consequent item more readily and quickly. However, children
who stuttered did not benefit from priming. This could mean that their lexical retrieval was not as advanced as in children who did not stutter.

Syntactic Ability

Some evidence exists that stutterers have a more difficult time producing correct grammar to form sentences. One such study by Logan and Conture (1997) established that when utterances are relatively longer, children experience more difficulty as measured by the likelihood of stuttering.

Phonological Processing and Awareness

Ingenious experiments have been devised to demonstrate that people who stutter have a more difficult time processing sounds. Sasiskaran, et al. (2006) asked subjects to monitor for a given phoneme. When the phoneme was reproduced, the subjects were instructed to press a button. This phoneme could be anywhere in a word or sentence. Adult stutterers were slower than the fluent controls at this task.

Summary and Conclusions

The stuttering population appears to be somewhat less capable of performing lexical tasks as compared to fluent speakers. This is probably a factor in both the development and perseveration of stuttering.

Personality Measures

A scientific literature search revealed that in the last twenty years no personality assessment studies of people who stutter have been reported. Although Murphy (1999) observed that stutterers have more shame and guilt than persons who are fluent, no studies to establish either causality or pathology are available. Bloodstein and Ratner (2008) did a meta-study of the early research on personality, dating from 1928 and
ending in 1985, and came up with the following “broad conclusions” (p. 209). First, the
evidence of the tests, both objective and projective, does not indicate that stutterers are
outside the norms of what is considered to be normal. Second, from the test data it cannot
be concluded that a person who stutters falls into any personality category nor do they
exhibit any given set of traits. Third, the overlap in adjustment between stutterers and
fluent people is large. The best adjusted people who stutter are far better adjusted than the
least adjusted fluent speakers. However, their fourth conclusion indicates that there is
ample evidence to indicate that the average fluent person is better adjusted than the
person who stutters. Their final conclusion is that stutterers are not as well adjusted when
it comes to social interactions as compared to people who do not stutter. They go on to
explain that there is also a disparity in risk-taking and self-esteem categories and
conclude that much of the difference may be due to the impact of stuttering on the daily
living of the person who stutters. Yairi and Ambrose (2005) seem to support this
argument they did not find significant differences in children’s self-esteem at the onset of
stuttering in their longitudinal study.

Bloodstein and Ratner (2008) point out that there is no evidence of the
psychogenic origin of stuttering. They object to the placement of stuttering in the section
in the International Classification of Disease (ICD-9) that includes anorexia and sleep
disorders.

Current Treatment in Adults

Because the subject of this dissertation is CPSS which is diagnosed in adults (and
possibly older adolescents), this section will address only adult stuttering therapy. A brief
treatise on the history of treatment was given in the introduction. Two good sources for
the history of stuttering treatment are Bloodstein and Ratner (2008) and Van Riper (1973).

**The Extent of Psychotherapy for Stuttering**

Bloodstein and Ratner (2008) summarize past attempts using psychotherapy to treat stuttering. They state that Freud himself did not address the problem of stuttering. Bloodstein and Ratner (2008) state that, “Many psychoanalysts appear to have come to the conclusion from their experience with stutterers that the majority of them are unusually ‘resistant to therapy’ – or at least their symptoms are (p.346).” The literature search has verified that recent psychoanalytic literature contains no case descriptions of the success of psychotherapy. The last three books published dealing with stuttering were *Psychoanalysis of Stuttering* by Barbara (1962), *Stuttering – A Psychoanalytic Understanding* (1982) by Glauber, and *Mistake Making* by Artiss (1993). They contained no successful outcome studies of adult stutterers.

Bloodstein and Ratner (2008) state that there has been some effort to use gestalt therapy, Rogerian therapy, and psychodrama in stuttering therapy. They conclude that there is no real evidence that these therapies produce better results than the existing therapies, although theoretically the potential for them to work is exists. Manning (2001) recommends psychotherapy as an adjunct to stuttering therapy. Psychotherapy or counseling are required to help some clients to establish a more satisfactory life-style and to solidify his or her gains in stuttering therapy. Guitar (2006) and Shapiro (1999) ignore the possibility that using psychotherapy would be a beneficial approach to therapy. Bloom and Cooperman (1999) discuss self-esteem and handling attitudes and emotions in their synergistic approach to stuttering. They also include four pages on cognitive therapy.
techniques including REBT. However, it is treated more as an adjunct instead of one of the focal points of the therapy. Zebrowski and Kelly (2002) fully understand the emotional and attitudinal components of stuttering, yet only suggest elemental thought-stopping, guided imagery, and relaxation techniques to cope with the above problems.

Webster and Poulos (1989) outline the self-talk aspect and elemental REBT techniques as part of fluency transfer from the laboratory to the real world. However, they do not make it the pivotal point in therapy. Schwartz (1999) expresses the necessity of using REBT with some clients in relapse prevention. Logan (1999), in his little known book published in England, *The Three Dimensions of Stuttering: Neurology, Behaviour and Emotion*, suggests that REBT could be used in the treatment of stuttering. Unfortunately, he only devotes six pages of his book to the topic of REBT. None of these applications appear to have taken root in mainstream stuttering therapy.

**Main Adult Stuttering Therapies Used by SLPs**

*Introduction*

Just like in psychotherapy, stuttering therapy has a large number of therapies each with its own name. For adults the main therapies can be placed in three categories: a) stuttering modification (“Iowa” school therapies), b) fluency shaping, and c) integrated therapy.

*Stuttering Modification*

*Introduction*

Modern stuttering therapy had its roots at the University of Iowa, where the first “Speech Clinic” was established with Lee Edward Travis as its head (Bloodstein & Ratner 2008). He had three very successful protégés who opposed the *zeitgeist* of the
workers in the field: phoneticians, psychiatrists, and others. Instead of teaching techniques of how to avoid stuttering, these students taught the stutterers to face their stuttering by minimizing both the severity/abnormality of the speech and working on the anxiety and embarrassment of stuttering. Travis and his students were interested in promoting the mental health of people who stuttered.

Bryngelson’s Contribution: Healthy Attitude and the Technique of Voluntary Stuttering

Bryngelson (see Bloodstein and Ratner, 2008) encouraged stutterers to stop hiding their stuttering and talk openly without avoiding feared words or using tricks, like swinging an arm or talking like a metronome. He also promoted the therapy to take place not only in the laboratory setting but in everyday situations. His greatest contribution was to introduce voluntary stuttering as a means both to desensitize the person toward his or her stuttering and to gain voluntary control of an involuntary habit or act of stuttering.

Johnson’s Contribution: Semantic Reorientation to Accurately Perceive Difference between the Act of Stuttering and the Person Who Stutters

Johnson (see Johnson, 1961) applied General Semantics to his therapy effort. As a result of his work, we have learned to separate the act of stuttering from the person who stutters. The more purist of his followers never use the word “stutterer.” Instead they use the phrase “person who stutters” so that no one should be defined by only one characteristic, especially if that characteristic is negative, because this is an inaccurate description of the individual as a person; moreover, it leaves an inherent stutterer feeling helpless to change his or her inherent behavior. Johnson taught his clients not to be intimidated by their stuttering. He believed that stuttering is mainly caused by fear of stuttering and subsequent avoidance of stuttering. He also advocated voluntary stuttering
using easy repetitions, called the “Iowa bounce.” He focused on teaching the clients to observe in a mirror what they did and the actions they took to stutter. Stuttering was not something that happened to a person but something he or she does. He focused on attitudes and framed his work in part on General Semantics. One of the techniques he encouraged was to build a fluency base by talking in more situations and even talking aloud to oneself.

**Van Riper’s Contribution: Cancellation, Pull outs, and Preparatory Set**

Van Riper (see Van Riper, 1973) organized his stuttering therapy around five stages: Motivation, Identification, Desensitization, Variation, Approximation, and Stabilization (MIDVAS). The basic goals of his therapy were to reduce anxiety and modify stuttering so as to be more fluent. The first step was to motivate the client. After motivating the client, the client was shown how to identify what he or she was doing when stuttering. This was followed by instructing the client to vary his or her way of talking. Both the identification stage and the variation were constructed so that clients could instinctively understand that they are actors, and stuttering is what they do, not what happens to them. The next stage of approximation consisted of smooth speech that was prolonged, something that does not sound quite naturally on plosive sounds like b and p. Although frequently this worked, sometimes the speaker would start to have uncontrolled tremors. Then the device of pullout was introduced. In the pullout, the client held onto the sound until he was able to smooth it out. When pullout failed, the client was asked to cancel his failure by, after a slight pause, repetition of the same word. This repetition did not have to be perfect but had to be a variation of the first attempt.
The final skill to be taught was the preparatory set (Helliesen, 2006). This consists of anticipating a stutter by scanning ahead and then, using the information from the identification phase, counteracting the usual stuttering pattern. To control an oncoming disfluency, the articulators are first set in proper position, then a flow of air is introduced, and finally a deliberate movement of identified tense muscles are effected. When all three techniques were mastered, the client used the techniques in the following order: a) first the preparatory set, b) if that failed, the pullout, and c) if neither succeeded then cancelling the disfluency, thus indirectly performing psychotherapy. The psychotherapy aspects are confrontation of the feared word and any irrational attitudes they might hold; this also provides a confirmation of internal locus of control.

Summary of Stuttering Modification

The above paragraphs provide the various aspects of stuttering modification contributors. Stuttering modification concerns itself with facing the reality that a person stutters through eliminating avoidances, minimizing fear, and addressing negative attitudes, albeit in a non-systematic, ad hoc manner. The goal is not to become a perfect speaker, but a more confident, self-motivated speaker who does not struggle with stuttering, and is confident that he or she can communicate effectively using speech behavior altering techniques.

Fluency Shaping

Overview

Shapiro (1999) describes fluency shaping as a therapy that focuses all its attention on eliminating any directly observable stuttering symptoms. It does not deal with emotions, attitudes, fears, or avoidances. Fluency is established in a laboratory and
consequently a transfer process is undertaken. The focus is on the manner of speaking, described in the paragraphs below, and not on the moment of stuttering (as with stuttering modification). The four techniques used are explained below. “Often such techniques are found in behaviorally (operantly) designed programs that seek to instate or reinstate fluency through sequenced steps in which the response expectation is prescribed and increased systematically. Should relapse occur, the client is recycled through the earlier steps in the program, which enabled him to achieve his fluency prior to relapse” (Shapiro, 1999, p. 188).

Flexible Rate

Guitar (2006) describes flexible rate as slowing down only those syllables that are expected to be stuttered. The actual slowing usually consists of the slowing of the first syllable and “transition to the second syllable.”

Easy Onsets

Easy onsets start with light vibration of the vocal folds in order to get voicing going. Sometimes, when the word starts with a consonant the easy onset is actually focused on the vowel with the consonant, somewhat prolonged (see Guitar, 2006).

Light Contacts

According to Guitar (2006), light contacts are formed by relaxing the articulators and slightly distorting the fricatives and plosives. The goals of how to perform an action are called targets (a short hand for target behaviors). The therapist usually models the targets and describes them in words that provide a visual image.
Proprioception

An additional tool in the armamentarium of fluency shaping is the ability to monitor both the position and motion of the articulators: lips, tongue, and jaw. The feedback can be used to monitor what is happening and identify abnormal actions.

Integrative Therapy

In the SLP literature the term *integrated therapy* may mean different things to different people. One of the best examples is given by Montgomery (2006). Montgomery stresses the flexibility of taking elements from diverse sources and combining them in a personalized way so as to not succumb to dogma, while focusing on the whole person. The elements include, but are not limited to: a) providing a menu of choices for speech management to the individual client, b) teaching the client the acceptance of stuttering, c) borrowing from both the techniques of fluency shaping and stuttering modification, d) conscious elimination of avoidances, and e) addressing attitudes and emotions which is not done systematically, but through talking about them.

Outcome Measures

Disagreement as to What to Measure

The most contentious issue in the speech therapy field is the measurement of the outcome of stuttering therapy. The differences of opinion are well documented in St. Louis’ (2006) article *Measurement Issues in Fluency Disorders*. St. Louis describes a survey of participants in the 10th Annual Leadership Conference for Special Interest Division 4 on Fluency and Fluency Disorders to categorize a given list of measurements in aspects of stuttering. The participants were to place the measurements in three categories: 1) essential, 2) helpful, but not necessary, or 3) not really necessary. There
was a huge difference among beliefs of the participants. Furthermore, St. Louis reported that the attempt to develop a “test for fluency” by the International Fluency Association failed after several years of effort.

General Categories of Candidate Measurements

Smith and Kelly (1997) describe stuttering as a multidimensional disorder. They divide the symptoms into two categories. Those that are observable (above surface) such as frequency, duration, and severity of stuttering, and those that are not observable or not readily observable (below the surface) including: 1) negative affect including guilt, shame, and anxiety; 2) avoidance of words and/or participation in activities both vocational and avocational; and 3) cognitive malfunctioning (self-downing, having external locus of control, etc.). On the other hand, due to differing opinions regarding stuttering therapy, there is no universal agreement of what to measure (Blomgren, et al. 2006 a, b; Reitzes & Snyder, 2006; Ryan 2006).

Shotgun Approach

Blomgren (2007) has opted for the approach to measure most everything for which there is a valid measurement tool. He proposes to measure items on three levels: a) whether a treatment does what it purports to do, b) treatment outcome in all areas important to the client regardless of what the treatment was designed to do, and c) treatment efficiency. He is supported in the importance of measuring all the areas important to the client by the World Health Organization (WHO, 2001) definition of an illness with respect to impairment (i.e., stuttering), activity limitation, and participation. Blomberg (2007) then goes on to demonstrate that even though there is no optimal battery of outcome tests, it is possible to find a set of tests that covers stuttering behavior,
functioning behavior, affect associated with stuttering, and cognitions associated with stuttering. The latter two items cannot be measured directly and are frequently the subject of self-report inputs, which may or may not be reliable.

Third Generation REBT Including Components Integrated from Other Psychotherapies

*Basis for Literature Search in Psychology in Order to Develop an Effective Stuttering Therapy*

In order to present a complete stuttering therapy model based on modern cognitive therapy, it was necessary to survey all the pertinent psychological tools. To inform the literature search for the proper psychological tools it would have been desirable to have a paradigm as to the etiology and causes of stuttering and specifically CPSS. Unfortunately, as a whole, the field of stuttering research, etiology, and therapy are in a pre-paradigm state (Kuhn, 1962).

The epigenetic model will be used to inform the construction of the best theoretical model of the etiology of CPSS. Bloodstein and Ratner (2008) have amply demonstrated (see above discussion) that there are physiological differences with respect to lexical development. Karrass’s et al. (2006) study has found significant correlation between stuttering and emotional reactivity, emotion regulation deficit, and ability to regulate attention. Emotional reactivity is defined to include the ease with which individuals tend to become aroused as well as the arousal intensity. Emotional regulation refers to the process of being able to initiate modulation of intensity, frequency, or duration of the physiological processes resulting from internal feelings, the internal emotions, and maintain the desired modulated state. Attention regulation deals with being able to focus attention toward or away from certain things. Findings suggest that these
three genetic predispositions determine which children might be at risk of having disfluencies in their speech and language. Moreover, once a child has started to have disfluencies, he or she may have more difficulty in learning how to overcome them. All children have disfluencies, but the prolonged, struggling behaviors in stuttering require learning (Logan, 1999). There is ample evidence (Brutten & Shoemaker, 1967) that two-factor learning takes place. Logan (1999) explains the Brutten and Shoemaker (1967) theory as follows: “Individuals who stutter must learn to stutter and they must also learn the instrumental avoidance behaviours so closely related with the tonic/clonic block complex of dysfunctional behaviours” (p. 49). Tonic block is a continuous disfluency and clonic block is one that is characterized by oscillations or repetitions (Hood, 1997). Starkweather and Givens-Ackerman (1997) note that stuttering occurs more frequently in certain situations than others. This they call situational dependency that frequently is not present at the very onset of stuttering, but becomes quite evident in a few years.

Logan (1999) notes that stuttering itself is not learned, but the emotional upset that exacerbates stuttering is. The situational dependency is quite individualistic to each person who stutters, giving strength to the argument that it is learned. One example of a possible situational learning pattern based on classical learning theory is that of someone whose stuttering could have started when, as a child, he or she was questioned by his or her father about something he or she might have done wrong. Because of the emotionally laden environment (such as a sense of guilt or fear) the amygdala interferes with proper speech formation and the child stutters more than usual. The stuttering itself may further invoke social disapproval and the emotional upset in this situation is reinforced.

“Classical conditioning paradigms readily and elegantly explain how emotional reactions
can be acquired and generalized to stimuli further removed from the original sources” (Logan, 1999, p. 49-50). Soon all authority figures may evoke both the emotion and concomitant stuttering. Similarly, a word or a sound may become feared and evoke stuttering. Stuttering itself then is regarded as a source of fear and further reinforces the upsetting emotions. This is especially evident when classical conditioning is viewed through the S-O-R paradigm (Woodworth, 1918) or its more recent version the REBT AxB=C paradigm (Ellis, 2000).

The hypothesis is that disfluencies occur naturally and randomly in learning to speak as part of uneven brain development in children. If, in certain overly sensitive children, these disfluencies and concurrent frustration are given certain positive and negative reinforcement regimens, these disfluencies may get entrenched as stuttering. But if they are benignly ignored, brain development “spurts” even out, cognitive and language skills match up again, and speech resumes with no appreciable disfluency.

Secondary stuttering behaviors are the result of instrumental learning or conditioning (Logan, 1999). This learning takes place when a behavior is rewarded. In this case the reward is tied to the person’s belief (conscious or preconscious) that the secondary behavior “is instrumental in avoiding, lessening, or escaping the disfluency” (Logan 1999 p. 50). Anyone who has talked to a severe stutterer has noticed a number of these secondary behaviors: a) clenching jaw or hand, b) forced breathing, c) eye blinks, d) pursing lips, e) head jerks, f) tapping toes, etc. The initiation and propagation of primary and secondary stuttering habits are by nature pre-conscious. This leads the stutterer to the false conclusion of external locus of control: that stuttering, which consists of both the primary and secondary behaviors, is something that happens to the stutterer
and that he or she has no control over these behaviors. As time goes on the stuttering behaviors become so firmly entrenched that they are hard to extinguish.

Logan (1999), using state-of-the-art knowledge of the limbic model and brain structures, provides technical information on how the limbic system, basal ganglia, and cerebellum operate in the “acquisition process of conditioned responses and how such responses can interfere with normal [speech] motor initiation and completion” (p. vii).

So far an explanation of how stuttering is initiated has been provided. A question is raised about the power of the propagation of stuttering. One of the explanations deals with kindling. The more a person has experienced the negative emotions of stuttering, the more his or her brain is apt to react in ways that--when the emotional overreaction is removed--the body still tends to malfunction. The kindling in stuttering is similar to epilepsy, bipolar and other brain disorders. Once a pattern has been established, it takes less and less emotional distress to trigger malfunction (Logan, 1999). Moreover, those who subscribe to the S-O-R or AxB=C model acknowledge that when the outside world comes into the picture there is a circular chaining which often leads to a downward spiral. The more you stutter the more you get punished by your peers and other people in the world. When the stuttering becomes severe enough, the severity of the punishment becomes traumatic. Symptoms that mimic Post Traumatic Stress Disorder (PTSD) then may occur (Starkweather & Givens, 2003; Heite, 2001). These symptoms are reported by people with CPSS.

Logan (1999), in the second edition of The Three Dimensions of Stuttering: Neurology, Behavior and Emotion, based on his exhaustive explanation of stuttering as a function of brain mechanisms, comes to these conclusions: First, stuttering, besides using
traditional therapy techniques, should include addressing the emotional component of stuttering. Second, the client should be taught to take risks and address all his fears about stuttering. Third, the client has to be encouraged to persevere – change of any habit, especially stuttering, is not easy. Fourth, citing some interesting brain research on persons with PTSD, the author makes a good case for using guided imagery of speaking fluently as an important part of modifying the brain. Logan (1999) believes that such practice, disassociated from fear, can actually change the limbic-basal ganglia-cerebellar areas of the brain to reduce fear of speaking, as well as increase the facility of motor activity while responding with the appropriate level of emotionality. Logan quotes a study by Shin et al. (1997). The guided imagery is similar to Rational Emotive Imagery advocated by Ellis (2001).

Finally, Logan (1999) enumerates the reasons why he believes that REBT is the treatment of choice in addressing stuttering. For each of the reasons, he gives a set of arguments--some of which will be summarized here. First, using rational self-talk, the client can learn to control his or her emotional reaction to a situation. (Use of the AxB=C paradigm is hypothesized to be effective when coupled with the hierarchy of out-of-the-laboratory speech assignments to desensitize the client both via action as well as via cognitive change.) The client will be able to perform much better when he or she is convinced by his or her self-talk that he or she will perform well. Second, REBT is both motivating, as well as instrumental, in reducing fear because the client and the therapist can challenge the client’s “awfulizing,” “terribilizing,” and “catastrophizing” about failure. Through proper techniques the client can be encouraged not to fear failure. Third, REBT techniques are not mystical and can be taught to the client so that he or she can use
them easily. The various REBT homework forms are especially accessible in generalizing the reduction of unhealthy negative emotions and arriving at a more functional set of negative emotions. Although Logan (1999) specifies a given homework form, REBT has now evolved a set of homework forms, some of which are more appropriate for the clients depending on their literacy and mode of thinking. Their homework sheets can be used to challenge irrational (self-defeating) ideas and substitute more rational (self-enhancing) ideas thus propagating change. Fourth, Logan (1999) is quite aware of the power of disputing irrational ideas and arriving at more effective thinking and more functional feelings. There are other REBT techniques mentioned, although not in enough detail to be practiced. Some of the techniques cross over into other areas of modern cognitive behavioral therapies.

In summary, Logan (1999) has set the background for the literature search in REBT and associated psychological therapies by providing the main goals of stuttering therapy based on the study of the brain. The goals are to biochemically modify the brain so that the emotions, cognitions, and behavior are changed. The client has to be taught to motivate himself or herself, to believe that the locus of control resides within him or her, to scale down emotional reactivity, to persist, and, above all, to change his or her beliefs in such a way as to reduce the “inappropriate neurological component that forms the basis of stuttering” (Logan, 1999, p. 94). The study will include material on research that would further the goals of stuttering therapy: to create a happy, self-actualizing person, who collaboratively evolves into the role of self-therapist and engages in enough social risks to lead a full life.
Basic REBT

History of Rational Emotive Behavior Therapy

REBT was originated in the mid 1950s as a reaction against psychoanalysis and strict behaviorism. According to Ellis (Ellis & MacLaren, 1998), the origins of Rational Emotive Behavior Therapy go back to 1953 when Ellis gave up his practice of psychoanalysis and experimented with new approaches to psychotherapy. These included skill training, active homework assignments, and in vivo desensitization. He read the works of ancient and modern philosophers. The Greek and Roman Stoic philosophers Zeno, Epictetus, and Marcus Aurelius especially impressed him. For over sixty years, he has quoted Epictetus “Men feel not disturbed by things, but by the views they take of them.” (Ellis & Harper, 1961, p.33) Recently he has advocated a more non-sexist version “People are disturbed not by things but by the views they take of them.” (Ellis & MacLaren, 1998, p. 10). In his writings (Ellis & Harper, 1961; Ellis & MacLaren, 1998; Ellis & Dryden, 1997), he also has acknowledged his indebtedness to Epicurus, Alfred Korzybski, Bertrand Russell, Spinoza, Gautama Buddha and Lao-Tsu.

The first iteration of REBT, called Rational Therapy, was formulated by 1955 and presented at a conference. Three years later a paper entitled “Rational Psychotherapy” (Ellis, 1958) was published in the Journal of Clinical Psychology. In 1961 Ellis, together with Robert Harper, published A Guide to Rational Living: How to Live Rationally in an Irrational World (Ellis, & Harper, 1961). In the years that followed, Albert Ellis turned his back on the university academic environment. He founded The Institute for Rational Emotive Therapy, renamed his therapy Rational Emotive Therapy (RET), and continued
to single-handedly evolve it. Concurrently he read Korzybski’s *Science and Sanity* (1933) and incorporated many of the General Semantics concepts into his psychotherapy.

In 1995, at the instigation of Raymond Corsini, Ellis renamed Rational Emotive Therapy to be Rational Emotive Behavior Therapy (Ellis, 1995). Ellis placed REBT in the same category as other Cognitive Behavior Therapies such as those of Aaron Beck and Donald Meichenbaum. All the authors of the current textbooks such as Davison and Neale (2001), Ivey et al (2002), Durand and Barlow (2003), and Dobson, Backs-Dermott, and Dozois (2000) agree that REBT is a Cognitive Behavior Therapy.

*Theory, Practice, and Basic Assumptions Underlying REBT*

In order to integrate aspects of humanistic theories and therapies into REBT we need first to discuss the theory, practice, and basic assumptions concerning human nature underlying REBT.

*The theory and practice of REBT.* Ellis (Ellis & MacLaren, 1998; Ellis & Harper, 1997) describes the theory of human distress as follows. If a person is confronted by an Adversity (A) and Consequently (C) feels overly distressed, it is not simply the Adversity (A) that causes the inappropriate distress and dysfunction. The real culprit is the irrational Belief (B) that, together with the Adversity (A), over-stresses them. In symbolic terms A x B = C.

Current REBT theory maintains that any demands on self, others, and the world are “irrational.” This means that demands will frequently prevent a person from getting what he or she wants. Ellis (1995) explains that “rational,” as applied to cognition, means that this cognition has to be both effective in getting your goals and self-helping as well as “empirically and logically valid” (p.85). He further explains that there is no absolute
rationality possible. In the post-modernistic and constructivist sense, all people have
different goals as well as internal reference frames to reality. Thus, what may be rational
for one person may not be rational for another person.

According to Dryden, DiGiuseppe, and Neenan (2003), what a client does not
want are inappropriate, unhealthy negative emotions. REBT defines emotions that are
extreme and debilitating such as anxiety, depression, rage, guilt, paralyzing hurt, shame,
and morbid jealousy as inappropriate or unhealthily negative. Furthermore, it states that a
client can replace, with practice, their irrational demands with strong preferences. Once
this is accomplished, the client will not be desperately unhappy, because their
inappropriate emotions will turn into their appropriate counterparts, healthy negative
emotions. The appropriate counterparts are concern, sadness, annoyance or constructive
anger, remorse, disappointment, regret, and non-morbid jealousy. The difference between
unhealthy negative emotions and healthy negative emotions is that unhealthy negative
emotions are paralyzing, while healthy negative emotions propel people to pursue their
goals and happiness.

REBT theory states that it is foolish and even unwise to wish for perfect
happiness because a) it is not possible and b) it would be de-motivating. It is concern,
remorse, sadness annoyance, and regret that help us avoid undesirable states of existence.
Even constructive anger and non-morbid jealousy drive us to better our society and our
own experience in the world.

The main tools that REBT advocates for change are Disputation (D) of irrational
demands, establishing more Effective (E) ideas, and Feedback (F) of new more
appropriate feelings. Moreover, REBT also advocates behavioral homework. An example
of behavioral homework is anti-shame exercises. In an anti-shame exercise the client goes out in public and does something that he or she considers shameful. For example, the client is asked, while riding a bus, to call out the names of the bus stops while remaining on the bus. This type of exercise teaches the client’s nervous system to understand that a) the client does not need the approval of all other people and b) that he or she can stand their derisive looks. In the case of stuttering, Ellis suggests to stutter voluntarily and observe that nothing awful happens.

REBT is also a semantic therapy. The client is taught to speak avoiding the use of absolutes “shoulds,” “musts” or “have to’s.” This is especially important during audible or silent self-talk. Ellis (1994) incorporated into his therapy the hypothesis advocated by Karen Horney that many dysfunctional people live under the tyranny of the “shoulds.” Examination of self-talk is one way in which a client can become aware of his or her demands on others, the world, and himself or herself. REBT also uses the concepts of General Semantics (Korzybski, 1933/1990). The therapist teaches the client to avoid words that reflect “black and white” or “always and never” thinking. Whenever the client uses excessively negative language, the therapist tries to challenge it. Ellis invented the exaggerated and funny words “awfulizing” and “catastrophizing” to throw some humor into his therapeutic practice.

Frequently the therapist tries to reframe the feelings and actions of the client so the client sees the full range of consequences, both bad and good. For example, when a client only sees the advantages of alcohol and drug addiction, the therapist does a reality check consisting of listing the bad consequences along with the momentary pleasures.
REBT hypothesizes that human misery is caused by irrational ideas. Change takes place when the therapist teaches the client to dispute his or her irrational ideas and come up with more rational alternatives. In order to solidify these alternatives the therapist assigns behavioral homework. Behavioral homework is also used to evoke inappropriate feelings and to prove to the client that nothing catastrophic happens when he or she is rejected or fails. REBT uses Socratic, empirical, logical, pragmatic, evocative, and behavioral methods to dispute irrational ideas and inappropriate feelings. Change can take place because humans are capable of thinking and acting rationally.

At the center of REBT is unconditional self-acceptance. REBT teaches the client to accept his or her existential self unconditionally, while evaluating his or her traits and actions. Ellis (2001) believes that rating of the total self leads to depression, repression, and inability to change. Conditional self-esteem, whether based on the client’s performance, characteristics, traits, friends, or lovers ultimately leads to disappointment, unhappiness, or anxiety. REBT teaches the client to develop the self-discipline not to rate either himself or herself or his or her life. REBT instills in the client a stoical acceptance of things as they are and the courage to take the risks to change what can be changed (with minimal whining and whimpering). REBT admits this is difficult to do and requires a lot of work by the client. However, the serenity and ability to enjoy the only life that we have on this earth is worth the price.

Basic assumptions concerning human nature and personality underlying REBT

Ziegler (1999) gives a definition of personality for REBT: “Personality is the person’s psychological individuality as manifested primarily in his/her cognition, emotion, and behavior and their interrelationship.” (p. 24). Ziegler (2000) derived a table that reflects
“Ellis’ position on the nine basic assumptions concerning human nature” (p.71) based on specific quotations in Ellis’ writings. See Table 2. From Ziegler’s discussion and the table the REBT stance can be seen as follows: 1) Humans have moderate choice which is limited by environment and genetics; 2) humans are born with both rational and irrational predispositions, 3) on the above definition of personality cognition, emotion, and behavior significantly interrelate. Therefore, humans can be best understood sometimes better as a whole (holism) and sometimes better by breaking apart cognition, emotion, and behavior; 4) In the nature versus nurture argument, REBT takes a stance that 80 percent of individual personality trait differences are due to genetics with only 20 percent due to environmental effects; 5) REBT argues that change is possible but not easy; 6) REBT takes the constructivist view that much of the client’s reality is created or constructed by the client. Thus, REBT tends not to spend much time on discussing the “truth value” of a perceived activating event; 7) REBT stipulates that external stimuli alone practically never directly evoke a response; 8) REBT subscribes to the notion that a client is both motivated by the homeostatic pleasure principle and by the heterostatic actualizing tendency; and 9) REBT follows the postmodernist view that human nature can probably never be fully knowledgeable even through the methods of science. This does not prevent the therapist from looking at his or her client scientifically. However, he or she should not expect to fully understand any individual. The client may well be the best expert on who he or she is and on his or her life situation

**Rational Emotive Behavior Therapy Strengths**

REBT posits that all people have both rational, self-enhancing, and irrational, self-defeating, cognitions. In other words, we are all Fallible Human Being (FHBs) and
Table 2

*Ellis’ (REBT) Position on the Nine Basic Assumptions Concerning Human Nature*

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<th>Moderate</th>
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<th>Mid-Range</th>
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Determinism  Irrationality  Holism  Rationalism  Environmentalism  Unchangeability  Objectivity  Reactivity  Heterostasis  Unknowability
will forever remain FHBs. Therefore, REBT instructs clients never to down or berate themselves as a whole human being. When a person does something wrong, he or she is advised to separate his or her worth as a human being from his or her undesirable characteristics. This facilitates turning the inappropriate negative feelings into appropriate negative feelings. The appropriate negative feelings then motivate the person to change. If the person evaluates himself or herself as bad or worthless or holds on to his or her inappropriate negative feelings, these feelings could paralyze him or her or sabotage his or her efforts.

Ellis believes that therapeutic change is hard work. This is in agreement with the recent developments in neuroscience (Ledoux, 2002; Ledoux, 1996; Panksepp, 1998; Lane, Nadel, et al, 2000; Damasio, 2000). The modern neuroscientists believe that in order to alter the brain a new way of evaluating, thinking, and acting has to be repeated hundreds of times to gain any permanence and automaticity. The neurons need to fire many times in order to wire together.

Ellis in his latter years became increasingly aware of factors that spring from diversity and multiculturalism. Ivey et al, in their textbook *Theories of Counseling and Psychotherapy: A Multicultural Perspective* (2002), give praise to “Ellis’ increasing awareness of multicultural and situational factors.” They give references where Ellis discusses these issues and cite a recent conference where he talked about becoming more sensitive and responsive to the issues of diversity. He recently co-authored an article on the cross-cultural approach to therapy (Lega & Ellis, 2001).

REBT can be taught to a therapist in a step-by-step manner. *A Primer on Rational Emotive Behavior Therapy* (Dryden, DiGiuseppe, & Neenan, 2003) or *The Practice of*
Rational Emotive Behavior Therapy (Ellis & Dryden, 1997) provide such instruction. REBT also has an established research base (David & Avellino, 2001; 2003) which has proved its efficacy.

*Third Generation or Integrated REBT*

The third generation REBT therapists are cognitive behavioral therapists who have integrated psychological tools from other schools of psychology which are effective when using REBT. When integrating elements from other humanistic theories and therapies one has to be careful not to emasculate a therapy that has been proven to be effective and efficient. Great care must be used to select elements from other theories to augment REBT, since some of the assumptions that underlie the theories are at variance. The resulting third generation REBT should be more effective, especially in the long run. On the surface, it may appear to the radical REBT theorist that some efficiency has been sacrificed. However, if the effectiveness is improved, the question of efficiency becomes moot.

*Building a Respectful and Collaborative Therapy Relationship*

Wampold (2001) and DiGiuseppe and Tafrate (2007) have established the need for therapeutic alliance. DiGiuseppe and Tafrate (2007) agree with Bordin (1979) that in order to have a good therapeutic alliance three elements need to be there. First, the client and the therapist have to come to an understanding about the specific goals of therapy. Second, the tasks of the therapy, both for the client and for the therapist, have to be understood. Third, there has to be a bond between the therapist and the client that is characterized by an understanding, warm, trusting, and accepting relationship. Third generation REBT takes the collaborative, power-sharing, and expert-to-expert style of
interaction between the client and the therapist from Person Centered Therapy (Rogers, 1980; Rogers, 1961) and from Bertalino & O’Hanlon (2002). The third generation REBT therapist is genuine, has unconditional acceptance of others (which is very close to unconditional positive regard), and acknowledges that the client is the expert on his or her goals, experiences, situation, abilities and essential self. The therapist reflectively listens to the client, is actively empathic, mirrors the client’s speech and affect, and respects the client’s wishes (Wolkenstein, 2002; Prochaska & Norcross, 1998). The therapist is genuine and clearly understands the client is the expert in the areas of his or her past experiences, his or her present functioning, his or her circumstances, and his or her future goals. The client is the author of his or her life past, present, and future. The therapist should be a careful editor of the client’s life, suggesting the possibility of different views or structures.

The Therapist is Expert on the Process of Change

The therapist is the keeper of the armamentarium of self-change tools. Thus, at the right moment when a client wants to attain a goal, such as eliminate a symptom or change a behavior, the therapist can reach back into his or her experience and tell what has worked for other people in a different context. The therapist can suggest an REBT, emotive, cognitive, behavioral, narrative, role-playing exercise, or homework. The therapist must do this in a directive, but non-authoritarian manner, preserving the client’s dignity and individuality. In this regard the therapist is a consultant and a teacher.

The Recognition and Handling of Existential Angst, Guilt, and Responsibility

The therapist should recognize that some clients are more apt to be subject to existential angst, guilt, and decidophobia. The therapist should be aware of the symptoms
and, when necessary, help the client to work through his or her existential angst and guilt by helping him or her face their mortality and assume responsibility for the meaning of his or her life (Walsh & McElwain, 2002; Yalom, 2000; and Frankl, 1985). However, the therapist should understand that existentialism is not, *per se*, a negativistic philosophy. As Ellis (1975) indicates, once you are no longer scared of dying, you can get on with the business of living.

*Use of Gestalt Techniques and Psychodrama*

When it is appropriate, a third generation REBT therapist can also use methods from Gestalt therapy such as “the two-chair method for a conflict split” and “the empty-chair method for unfinished business” (Strumpfel & Goldman, 2002). He or she can also use psychodrama in group work (Dayton, 2003).

*Stages of Change*

Prochaska, Norcross & DiClemente (1994) provide a model of how a client changes. The client goes through six distinct phases: pre-contemplation, contemplation, preparation, action, maintenance, and termination. There are tasks associated with each of these changes. This model of change can be integrated into third generation REBT.

*Motivational Interviewing*

Miller and Rollnick (2002) give a number of good techniques for guiding a client through the stages of change. Fields (2007) provides a good example of what the tasks are for each stage of change using motivational interviewing as the basic approach.
Self-Actualization

Maslow (1968) described the process of self-actualization. This same process should hold for the stuttering client. There is a hierarchy of needs and the client can be guided to meet these basic needs first and proceed to self-actualization.

Relapse Prevention

Marlatt and Gordon (2001) advocate the view that a lapse need not necessarily lead to relapse. Thus, the stutterer can learn to understand that one disfluency--or for that matter, a day of stuttering--should not lead to a complete relapse. The black and white thinking can be disputed and challenged.

Cost-Benefit Analysis

SMART Recovery (2003) discusses the motivational power of a cost/benefit analysis. This same technique can be used in motivating a client to perform his or her homework.

Discussion of Challenges in the Use of Third Generation REBT

The main challenge with third generation REBT is keeping the fine balance between the dignity and autonomy of the client, and the effectiveness and efficiency of the therapeutic process. When doing therapy, the therapist will keep in mind that the client should determine both the pace and direction in which the client wants to develop. The therapist should allow the client to be responsible for his or her own life and should value the client’s needs, be non-judgmental of the client’s shortcomings, and be sensitive concerning the client’s feelings.
CHAPTER III
METHODOLOGY

Introduction

The tasks that will be accomplished will include a thorough review of the Rational Emotive Behavior Therapy literature, as well as stuttering therapy literature as it is currently practiced and taught at the universities. Other tasks will include: a) generating a comprehensive model of stuttering etiology and propagation and b) devising a therapy to address the skills necessary to manage the CPSS client’s emotions, attitudes, and behavioral habits.

The Literature Review

Sources for Literature Review

The literature search will be conducted through both the Argosy University and University of Washington (UW) library systems. Argosy University EBSCO has accessible PsycINFO, PsycARTICLES, and the Psychology and Behavioral Sciences Collection. Argosy University also has an electronic dissertation database. The University of Washington (UW) databases for stuttering and psychology include: Expanded Academic ASAP, ProQuest Databases, and the Web of Science. All of the other research resources at the UW will be used: 1) UW Libraries’ books and hard copy journals, 2) UW electronic journals, and 3) catalogs and reference tools both for books and journals.

There are a number of websites that deal with stuttering. These include the websites of the American Speech and Hearing Association (ASHA), ASHA’s Special
Interest Division 4 on Fluency and Fluency Disorders, Mankato State University’s Stuttering Home Page, the Stuttering Foundation of America, the American Institute for Stuttering Treatment and Professional Training, and the National Stuttering Association. These websites will be revisited to search for the newest developments in stuttering theory and practice.

_Stuttering and Stuttering Therapy_

One part of the literature review will focus on stuttering, stammering, and fluency and fluency disorders. The focus will be on the two most widely accepted techniques: a) stuttering modification and b) fluency shaping and the concomitant counseling that takes place when stuttering therapy is done by Speech and Language Professionals. Data bases and authoritative websites will be searched using ‘stutter*,’ ‘stammer*,’ ‘fluency,’ ‘fluency disorders,’ ‘fluency shaping,’ and ‘stuttering modification.’ These terms may be combined using Boolean ‘or.’ In order to narrow and focus the search Boolean ‘and’ function will be used respectively with ‘outcome,’ ‘etiology,’ ‘onset,’ ‘frequency,’ ‘duration,’ ‘disfluency,’ ‘speech rate,’ ‘listener rating,’ ‘moment of,’’ ‘visible,’’ ‘audible,’ ‘primary,’ ‘secondary,’ ‘physical reactions,’ ‘physiological,’ ‘cardiovascular,’ ‘cortical,’ ‘galvanic skin response,’ ‘frustration,’ ‘tension,’ ‘feelings,’ ‘affect,’ ‘anxiety,’ ‘guilt,’ ‘EEG,’ ‘ERP,’ ‘PET,’ ‘fMRI,’ ‘motor abilities,’ ‘neurotransmitter,’ ‘psychological,’ ‘lexical,’ ‘syntactic,’ ‘phonological,’ ‘personality,’ ‘easy onsets,’ and ‘proprioception.’

_Third Generation REBT_

The second part of the literature review will focus on Rational Emotive Behavior Therapy. This includes the second and third generation of REBT that has incorporated generally accepted trans-theoretical psychological techniques. Data bases and
In order to build an effective therapy protocol, it is necessary to develop a comprehensive theoretical model of how stuttering develops, how it is propagated, and the reasons for relapse. All the biopsychosocial factors that are associated with stuttering need to be included in this model so that they can be addressed in therapy.

Building Blocks

The basis for building a theoretical model of stuttering will be the work done in the area of etiology by Logan (1999), Brutton and Shoemaker (1967), Yairi and Ambrose (2005), and Bloodstein and Ratner (2008). Adding in the lifespan issues will follow the material found in Berger’s (2001) *The Developing Person through the Lifespan* and trauma issues will closely follow the work on stuttering and trauma as described in the articles by Starkweather and Givens (2003) and Heite (2001). The REBT framework sill
be used to focus on the beliefs and self-talk behind the emotions that exacerbate and maintain stuttering.

The Process

In order to have a useful theoretical model all the terms will have to be defined operationally. Corsini (1999) defines operational definition to be “1. A concept introduced by Percy Bridgman of a definition that specifies the precise operations (methods) by which any phenomenon or construct is created, determined, or measured, as in stating the operational definition of ‘intelligence’ is ‘the score on the intelligence’ test. Only in this way can the model be tested for scientific validity and/or ‘falsified.’

The other major challenges will be to include only those parameters in the definition that have direct bearing on stuttering and to explain the factors in a succinct and clear way so as to be comprehended by the reader. Every concept in the definition of the theoretical model should suggest a therapeutic modality to address the “cure” or amelioration of CPSS.

Enumeration and Organization of the Therapy Processes and Steps

Introduction

Although the specific steps in building a therapy cannot be listed at this time because of the creative process, some general statements about the creation or evolution of such a therapy can be made. Specifically, some of the necessary topics which need to be addressed in the therapy are known.

The five habits associated with stuttering are: 1) irrational cognition (unhelpful self-talk), 2) insufficient sensory perception of tension and proprioception of muscles that are used in speech formation, hence stuttering, 3) disturbed emotions about stuttering, 4)
the behaviors that make up stuttering, and 5) avoidance habits. The main irrational cognitions about stuttering include: 1) not accepting oneself whether one stutters or not; 2) perfectionistic evaluation of fluency (black and white thinking); 3) low frustration tolerance of not being able to talk perfectly; 4) awfulizing about stuttering; and 5) self-downing of oneself due to stuttering.

Without sensory perception of tension and proprioception of muscles, the speaker is unable to monitor and relax the involved speech muscles. The disturbed emotions include anxiety, fear, shame, and guilt. Anxiety and fear are associated with certain words, sounds, and speaking situations. Shame and guilt are the result of someone who stutters having irrational beliefs about stuttering and having irrational beliefs of not being able to manage stuttering. The behaviors that make up stuttering can be divided into primary stuttering, secondary stuttering, and avoidance behaviors. Primary behaviors produce distorted sounds by sending inappropriate signals to the muscles involved in speaking. Secondary stuttering behaviors are those that are learned by trying to force out sounds. These include head jerks, insufficient eye contact, non-prosodic rhythm in speaking and “magical rituals” such as snapping fingers, moving a foot, swaying back and forth, and other more idiosyncratic behaviors by the individual stutterer. Avoidance behaviors include avoiding sounds, words, speaking situations and risk-taking. The final task will be to provide an algorithm of sequencing the stuttering therapy steps or processes in order to ensure optimal outcome in terms of both effectiveness and efficiency.
Main Resources

From the REBT literature, stuttering literature, and trans-theoretical psychology theories (Dryden, DiGuisepppe, & Neenan 2003; Ellis, 1998; Ellis, 1994; Ellis, 2001; Miller & Rollnick, 2002; Prochaska, Norcross, & DiClemente, 1994; Miller & Rollnick, 2002; Wampold, 2001 and Gergen, 2001) the steps/processes to build an efficient and effective stuttering therapy protocol will be developed. The algorithm for the sequencing of these steps will be based on many sources. Some of the sources to be used are Gedanken Experiments, descriptions by various authors of therapy successes, and the clients’ discussions of their failures in stuttering therapy. From the field of psychology the treatment regimens of the closely associated General Anxiety Disorder (GAD) will be examined.

Philosophy/Theory for the Therapist’s Approach to Therapeutic Process

The literature search in this area will focus on finding the qualities of the therapist that lead to successful outcomes. Attention will be paid to how the therapist perceives his or her role in the therapeutic process. Equally important will be the examination of the therapist’s expectation of the role of the client in the therapeutic process. The therapist’s view of the allocation of responsibilities between the client and therapist will be closely examined as well.

Goals for the Client’s Understanding of the Therapeutic Process and Means to Help the Client to Evolve in the Desired Direction

It is common knowledge that some clients have a better attitude toward therapy and, thus, can help to achieve their goals in less time. The literature will be searched to find how to best prepare the client for therapy.
Establish Therapeutic Alliance

Wampold (2001) and DiGiuseppe and Tafrate (2007) have established that a true therapeutic alliance as viewed by the client is the best predictor of therapy outcome. The literature search will focus on establishing the parameters of optimal therapeutic alliance and means for achieving this.

Collaborative Therapy Process

Cursory investigation of therapy outcomes have indicated that for most clients a collaborative therapy process yields the best results and leads to permanently successful outcomes. Further literature search will establish the veracity of this assumption.

What Is Expected of the Therapist?

The tasks allocated to the therapist will be examined through literature search and outcome studies. Both psychological and stuttering therapy tasks that are allocated to the therapist will be enumerated and explained.

Taking Responsibility for Homework by the Client

In order for the client to alter his or her brain and be able to learn to manage or control his or her stuttering, it is important for him or her to practice what he or she learns within the therapy sessions because the client, at most, spends only a few hours of the 168 hours per week in a clinical setting. A survey of the literature will investigate how well this practice is being followed by successful therapists.

Explanation and Mastering of the ABCDE’s of REBT

The crux of changing habits is to base them on sound theoretical approaches and techniques. The basic tenet of REBT is that the client needs to learn how to change his or her beliefs and attitudes. The new attitudes then need to be reinforced by action
assignments to be carried out between sessions. The main tool for changing beliefs and attitudes in REBT is the ABCDE technique. In brief, A stands for the activating event, B stands for beliefs about the activating event, C stands for consequent emotions and/or actions. In order to counteract an irrational belief, D self-talk disputing is done using humor, empirical evidence, logic, and pragmatic reasoning. The E stands for the effective new cognition, emotions and actions that are the result of the new belief. The REBT literature will be examined to find the various methods of how the ABCDE’s can be taught and practiced. The theory behind the techniques will be explained. The action assignments will be also dissected using the ABCDE model.

Teach Unconditional Self-Acceptance (USA) Without Regard to Whether or Not One Stutters

A key concept of REBT is Unconditional Self-Acceptance (USA). For a person who stutters, Unconditional Self-Acceptance means self-acceptance whether the person stutters or does not. The best techniques from REBT will be taken to provide the client with the tools for learning USA. The contrast with conditional self-esteem will be explained. The REBT literature will be used as a basis.

Explain the abc’s of Stuttering

Cooper (1987) named the three components of stuttering: a, which stands for affect; b, which stands for behavior; and c, which stands for cognition (beliefs and attitudes). Since, in the stuttering literature, proprioception is mentioned as part of therapy (e.g. see Bloodstein and Ratner, 2008; ) s, which stands for sensory perception, should be included in the components of stuttering. The literature will be further researched to find support for both “abc” and “s” to be included in the basic model of
stuttering. The client needs to be convinced that all of these components have to be worked on to change the chronic stuttering syndrome.

*Explain Stuttering as Post Traumatic Stress Disorder (PTSD)*

The importance of traumatization by stuttering experiences has been validated by Starkweather and Givens (2003) and Heite (2001). Methods to deal with the Post Traumatic Stress Disorder (PTSD) like symptoms will be incorporated in the therapy.

*Explain Role of Assertiveness Training in Stuttering*

Stuttering, especially extreme stuttering is uncomfortable to both the speaker and the listener. Many speech therapy assignments and techniques impose discomfort on listeners, especially those that require approaching strangers such as sales people. Before a person who stutters is able to carry out these assignments, he or she needs to convince himself or herself that it is acceptable to impose on other people and to have them feel discomfort. A literature search will be done on the topic of assertiveness training to provide tools for convincing the client that he or she is entitled to impose on other people if it provides the client the needed experiences to advance stuttering therapy.

*Explain Role of Desensitization Training in Stuttering*

Stuttering therapists have long ago established the fact that desensitization is an important factor in managing stuttering. Sheehan (1970) and Van Riper (1971) and others have used voluntary pseudo stuttering as an integral part of therapy. The stuttering therapy literature will be revisited to build a comprehensive view of desensitization. Also, the REBT literature will be revisited to provide examples for generalized desensitization which can be built using anti-shame exercises. Both stuttering therapy literature and
REBT will be explored to find the most effective and efficient techniques of desensitization.

**Stages of Change**

*Introduction*

Trans-theoretical research has found that it is advantageous to view changing habits through the lens of the stages of change model (Prochaska, Norcross, & DiClemente, 1994). Since stuttering involves a number of cognitive, emotional, avoidance, and behavioral habits, the stages of change model needs to be understood by both the client and the therapist with respect to what takes place in each of the stages, and what tasks the client and therapist are performing at each of these stages. Using insights from addiction studies (Fields, 2007), the therapy will include what is to be done in each of the stages.

*Work in Pre-Contemplation Stage*

Most people who have Chronic Perseverative Stuttering Syndrome (CPPS) have given up on stuttering therapy or psychotherapy to help them cope with stuttering. If these people appear in therapy, it is because someone in their family or work situation has insisted that they search out help. Miller and Rollnick (2002) specify the tasks that the therapist and the client each have to do in this stage. Material from other authors (e.g. Fields, 2007) will also be incorporated.

*Work in Contemplation Stage*

People who stutter and appear for therapy when they are in the contemplation stage, do not really believe that stuttering therapy can help, but they have enough doubt to investigate the possibility.
Work in Preparation Stage

The clients who come for therapy in this stage are not yet willing to commit themselves to therapy. The therapist needs to prepare the client for therapy.

Work in Action Stage

The work in the action stage will consist of REBT and techniques taken from the field of stuttering therapy from two approaches: stuttering modification and fluency shaping (Manning, 2001; Guitar, 2006). From the stuttering literature the most important techniques that are necessary to provide the client with a change in affect, behavior, cognition, and sensory perception will be incorporated. The organization of how to present and reinforce these techniques will be based on literature from REBT and stuttering therapy.

Work in Stabilization Stage

Once a person has learned to manage the four dimensions of stuttering and been helped to increase his or her fluency, techniques from REBT, mainstream stuttering therapy, and Relapse Prevention will be selectively chosen to stabilize the success.

Work in Maintenance/Relapse Stage

Prochaska, Norcross, and DiClemente (1994), in their stages of change model, propose the last stage to be the termination stage. However, in the field of drug and alcohol abuse, as well as stuttering, relapse is a frequent occurrence. Thus two other stages, the Relapse and the Regrouping stages need to be added. Actually, all psychological changes are subject to many cycles of lapses and relapses. The literature from Relapse Prevention, REBT, and mainstream stuttering therapy will be used to build a robust model to prevent lapses from turning into relapses.
Work in Regrouping Stage

Once stuttering has returned, i.e. the client has relapsed, it is important to have a well thought out model on how to recycle through the necessary stages of change. The first step is to make the client aware that relapses, or at least lapses, may well occur. The exact steps of establishing the expeditious return to the stabilization stage will be created.

Termination Stage

The client may terminate from formal therapy when he or she has been taught to be his or her own therapist. Literature will be combed to find the best way of doing this.

Eliciting the Client’s Individual Contribution and/or Original Approaches

Since humans have constructed their own world view and like what they have created more than what is given to them, it is important to let the client participate fully in his or her self-therapy Gergen (2001). All therapy in the last analysis is self-therapy and after termination of formal therapy the client should be able to help himself or herself to live life to the fullest. As William James stipulated at the turn of the century, some people are “tender-minded,” some are “tough-minded,” and all of us are on the continuum of that scale. Since some approaches to therapy are more tender-minded and some are more-tough minded, the client is best served by creating therapeutic tasks that serve his or her temperament at that moment in therapy.

Self-Help Groups/List-Servers

Stuttering is a social problem. Most people who stutter do not stutter when they are alone or they stutter significantly less. Manning (2001) recommends that the client contact support groups to help him or her deal with the problem. A number of support groups are listed in his Appendix B. The therapy steps will discuss how to contact the
support groups and how to use the support groups in the therapy process. In addition, there are a number of stuttering list-servers (see Stuttering Home Page, 2008) that the client can join. The therapy steps will discuss the timing of when the client should sign on to the list-servers in order to help with therapy and prevent relapse.

*Self-Actualization*

Maslow (1968) was one of the first psychologists who understood that humans have a hierarchy of needs. To be fulfilled the client needs to express his or her new found skills so as to advance himself or herself toward the goal of self-actualization and satisfaction with life. Before the client terminates his or her therapy it is important to establish how the client can use his or her new found mastery for further development. The study will revisit the topic of self-actualization to provide the therapist and client suggestions of how to proceed with the rest of his or her life. The topics will include, but not be limited to: a) getting absorbed in some creative activity; b) experimenting with the many activities that are available to the client; c) developing new interests; d) developing a sense of humor; e) upgrading relationships; f) upgrading work situation/opportunities; etc.

*Prepare Checklist/Progress Report*

It is important to measure the client’s progress: to know where the client has been with respect to stuttering and how far he or she has progressed. The most appropriate checklist of progress measures will be used and/or adapted.
Write a Bird’s Eye View of Successful Therapy

Both the therapist and the client could benefit from knowing how typical therapy would proceed and what would happen in typical circumstances. The sequencing of the steps in therapy is provided by Dryden et al (2003).

Sequencing and Organization of the Above Steps and Processes

As can be seen there are many steps in the REBT approach to CPSS; some of the steps clearly precede the others. Other steps will be done over a period of time. The sequencing of the tasks in therapy is part of generating the therapy.

Concluding Statements on Methodology for Building Treatment of CPSS

The treatment for CPSS will focus on the holistic treatment of a person who stutters. It will include stuttering therapy, REBT, counseling, and reframing of the social reality of the client. During the dissertation proposal no external clients will be used. The process will rely solely on theoretical deductive and inductive logic, and insights garnered from the dissertator’s own journey as a person who stutters. The first step, post dissertation, will be to conduct a pilot study with a few clients with the dissertator as the therapist under the guidance of relevantly-qualified professionals.

The second step will be writing a manual. The third step will be recruiting an SLP to apply the manual to one of his or her clients. The fourth step will be to set up a psychologist to conduct a case study on one of his or her clients who stutters. After that, the task will be to arrange clinical studies proving the effectiveness of the manual in the hands of both a SLP and a psychologist. The final step will be to present the results at professional conferences with pre- and post- measures. The hope is to get the Stuttering Foundation of America interested so that the manual can be widely disseminated.
CHAPTER IV

A NEW ALL-INCLUSIVE DEFINITION OF CPSS

Introduction

In order to design a therapy for a condition it is necessary to provide an all-inclusive holistic definition of the phenomena. Currently, no such a definition exists. The current definitions, furthermore, use terms that are easily misunderstood.

The following section of this chapter gives the dissertator’s original, all-encompassing description of CPSS with a clear definition of the terms in an unambiguous manner. Then the next section gives reasons why the definition of chronic stuttering needed to be expanded. The final section of this chapter is a discussion of why this new definition is superior to those that are currently available.

Definition of CPSS

Overview of Definition

The dissertator proposes an operational definition of CPSS that includes six parts: 1) the directly or indirectly observable part which involves speech producing muscles; 2) the directly or indirectly observable part which involves muscles that serve no purpose in producing speech; 3) distortions of speech; 4) the avoidance mechanisms which for the most part cannot be readily recorded with audio or video equipment; 5) the emotions and cognitions that interfere with self-correction of speech and the enjoyment of life; and 6) the vocational and avocational choices that prevent a person from leading a truly self-
actualizing and creative life. The dissertator has adapted terminology to better describe each of these categories.

**Visible and Audible Speech Producing Muscle Anomalies**

**Repetitions**

As the common usage of the word indicates these consist of repetition of a whole word, a syllable, or a sound. The repetitions are involuntary, voiced or unvoiced, and sometimes co-occur with struggle or other symptoms.

**Blocks**

Blocks are a stoppage of the forward movement of speech. Like repetitions, they are involuntary, can be voiced or unvoiced, and sometimes co-occur with struggle or other symptoms. Voiced blocks are sometimes referred to in the literature as prolongations.

**Contrasted to Normal Speakers**

These Stuttering-Like Disfluencies (SLDs) occur not only in stuttered speech, but also in normal speech in adults, teenagers, and especially in children who are learning how to speak. The differences are usually in frequency, duration, emotionality and struggle associated with them.

**Visible and Audible Non-Speech Producing Muscle Anomalies**

Stuttering is frequently accompanied by various superfluous or struggling behaviors that do not serve any superficially obvious, useful function in speech production. To the stutterer, secondary symptoms feel automatic, i.e. involuntary. Indeed, at the moment of stuttering they are involuntary. The automaticity and involuntariness will be discussed later.
Eye Blinks

This is one of the most common secondary symptoms that accompany the act of speaking.

Averting Eye Contact

During a stutter the speaker averts his or her gaze from the person or persons he or she is talking to. He or she does not look the other person(s) in the eyes as other speakers in Western cultures customarily do. At the moment of stuttering this is involuntary.

Snapping of Fingers

This can be done by either or both hands.

Swinging of Hands

Again this can be done by either or both hands.

Twitching or Tensing Various Facial Muscles

These can resemble the facial tics or be more pronounced and widespread.

Jerking of the Whole Head

This can be quite severe.

Tapping of a Foot

The speaker may tap either of the feet.

Swinging Back and Forth

The speaker may rhythmically sway back and forth or perform more jerking, swaying motions.
Idiosyncratic Tensing, Twitching or Moving Other Muscles

There are many other ways that muscles may be tensed, twitched or moved, muscles that in normal people are not involved in forming speech.

Distortions of Speech

There are a number of ways in which speech can be distorted that a trained listener can spot. Not all of these distortions are associated only with persons who stutter; some of them can also be perceived in persons who talk when they are under stress. Some of these may be involuntary; others may start out as a voluntary mechanism to avoid stuttering or even as part of stuttering therapy.

Rate of Speech

The stutterer usually has a slower rate of speaking.

Tone

A person who stutters frequently speaks in a shriller or higher pitch when talking to other people than when he is by himself. Or on the other hand, he or she adapts a much lower pitch of voice to relax the speech-producing muscles.

Sing-Song Voice

Some stutterers talk in a sing-song voice. This is usually the result of outmoded therapy.

Unnatural Prosody

The stutterer frequently talks in a flat voice without inflections. This may be the result of outdated therapy or an attempt at self-therapy.
Talking as if Simultaneously Chewing

This way of talking is usually a result of a therapy that really was not well thought out or a result of the individual finding a way to hide his or her stuttering.

Idiosyncratic Speaking Manner

The dissertator believes that there are other ways in which the naturalness of voice has been either voluntarily or involuntarily altered. Not infrequently, a person who stutters will adopt an accent to, at least temporarily, hide his or her stuttering.

Avoidance Behaviors while Speaking

Avoidance of Sounds

Many stutterers have more difficulties with certain sounds at a given time. Throughout the lifetime different sounds are designated in the stutterer’s head as “difficult” (i.e. sounds that he or she will probably stutter on). The stutterer will frequently avoid these sounds by substituting words or by the use of circumlocution.

Avoidance of Words

Sometimes the fear is associated with a word and not a sound. In this instance, the stutterer scans ahead and avoids words he or she has had difficulty saying in the past. Just as with sounds, the avoidance of a word can be accomplished by substituting words, circumlocution of words, or by inserting phrases that have nothing to do with expressing the original thought or answering a question.

Use of Starter Phrases, Words, Sounds or Pauses

Starter phrases, words, or sounds are used as a means to avoid going directly to the feared sound or word. Sometimes, the “phobic period” can be “waited out” by
clearing the throat, pausing, using “um” (or similar interjections), inserting a word such as “actually,” or a phrase “in my opinion.” A listener may or may not see the ruse.

Self-Defeating Attitudes and Unhealthy Negative Emotions

Self-Defeating Belief (Irrational Beliefs)

Irrational beliefs will be discussed in the latter chapters of this dissertation as part of the REBT explanation of stuttering personality. The dissertator wants to emphasize that self-defeating belief helps the stuttering to persevere and inhibits the stutterer to experience life to its fullest.

Unhealthy Negative Emotions

Unhealthy negative emotions will be discussed in the latter chapters of this dissertation as part of the REBT explanation of stuttering personality. These emotions include shame, anxiety, guilt, as well as anger at others and the world in general. The feelings of helplessness and hopelessness are especially pernicious.

Self-Limiting General Life Choices

Although no scientific studies exist to verify that the stutterer puts limitations on his or herself, anecdotal data gathered by the dissertator indicates that the stutterer avoids and otherwise disqualifies himself or herself in fully participating in life even though no one else, or at most only some inconsequential people in the stutterer’s life, would suggest that the stutterer avoid.

Situational Avoidances

Every stutterer the dissertator has ever known has tried -- from time to time -- to escape talking in certain situations because they have experienced difficulties in these or similar situations in the past. Thus, he or she often remains silent in the classroom even
when they know the answers. Although this is not an unusual behavior among people who talk normally, it is frequently exaggerated in those who stutter.

Avoiding Talking to Certain People

Every person has avoided talking to some people at some time because he or she felt uncomfortable. The stutterer tends to do this more often -- even when the stakes are high, such as talking to a boss, trying to get to know a person whom he or she would want as a friend, or talking to someone with whom he or she would like to be involved romantically.

Role Avoidances

The stutterer will frequently not attempt to be in the role of a leader or somebody who has to do a lot of public speaking. Again, here we can distinguish between social phobia and stuttering phobia. The avoidance of a role may be the same, but the reason for the avoidance is different. Some persons are shy or social phobic; the person who stutters does not want to let others know that he or she stutters (although, he or she may be shy or have social phobia as well).

Vocational Delimitation

Many stutterers will not attempt to pursue certain vocations because they believe that their stuttering would prevent them from being an adequate -- let alone outstanding -- performer in the profession or occupation of their choice.

Avocational Delimitation

Many stutterers will severely limit their social life--including dating, pursuing compatible friendships, joining community organization, becoming active in their
religious organizations and advocating political causes—because they believe that stuttering would lead to rejection after rejection and they could not bear these rejections.

The Necessity for Expanding the Definition

Overview of Currently Used Definitions

In the current literature stuttering is defined mostly by its visible and audible symptoms. For example, Hood (2004) defines stuttering as

“Stuttering is a communication disorder characterized by excessive involuntary disruptions in the smooth and rhythmic flow of speech, particularly when such disruptions consist of repetitions or prolongations of a sound or syllable, and when they are accompanied by emotions such as fear and anxiety, and behaviors such as avoidance or struggle (p. 56).”

Barry (2006), in what is currently the most popular textbook on stuttering, defines it as follows:

“Stuttering is characterized by an abnormally high frequency and/or duration of stoppages in the forward flow of speech. These stoppages usually take the form of (1) repetitions of sounds, syllables, or one-syllable words, (2) prolongations of sounds, or (3) “blocks” of airflow or voicing in speech. (p. 13).”

Manning (2001) states that the most popular definition for clinical studies has been the one provided by Wingate (1964):

The term “stuttering” means: 1. (a) Disruption in the fluency of verbal expression, which is characterized (b) by involuntary, audible, or silent repetitions or prolongations in the utterance of short speech elements, namely: sounds, syllables, and words of one syllable. These disruptions (c) usually occur frequently or are marked in character and (d) are not readily controllable. 2. Sometimes the disruptions are (e) accompanied by accessory activities involving the speech apparatus, related or unrelated body structures, or stereotyped speech utterances. These activities give the appearance of being speech-related struggle. 3. Also, there not infrequently are (f) indications or reports of the presence of an emotional state, ranging from a general condition of “excitement” or “tension” to more specific emotions of a negative nature such as fear, embarrassment, irritation, or the like. The immediate source of stuttering is some incoordination expressed in the peripheral speech mechanism; the ultimate
cause is presently unknown and may be complex and compounded (p. 488).”

What Current Definitions Do Not Cover

In recent years consumer groups, such as the National Stuttering Association, have informally defined the term “covert stuttering” in a way that, so far, has only been marginally acknowledged in the professional literature. Thus, Hood (2004) defines “covert features” as “Unlike the overt behaviors which can be seen and/or heard and are relatively easy to measure in terms of their frequency intensity, duration, and type, the covert behaviors are not openly shown and less easily determined. They include such cognitive and emotional factors as fear, anxiety, negative emotion, shame, guilt, and frustration, etc. These “concealed or invisible” features are often difficult to determine” (p. 19). Hood (2004) does not include these covert features as an integral part of stuttering that all stutterers revert to from time to time.

On Covert Stuttering List Server (2007-2008), correspondents describe themselves as people who can totally hide their stuttering behaviors by avoiding situations, sounds, and/or words, yet suffer internally from the above emotions and cognitions. They scan ahead and then use avoidances. Many of the correspondents define themselves as having forgone vocational and avocational goals, not speaking up when they would have contributed to a conversation, and consequently failing to lead a meaningful life.

None of these elements are covered by current definitions in the stuttering literature. No research papers have addressed all the elements or the full extent of stuttering with all its factors.
The Superiority of the New Holistic Definition of Stuttering (CPSS)

The definition of stuttering, renamed Chronic Perseverative Stuttering Syndrome, has definite advantages for those who have experienced difficulty in overcoming their stuttering and not become spontaneously fluent. First, resolution of the symptoms will remove some of the hurdles of the stutterer to pursuing a more self-actualizing life-style (Maslow, 1968).

Second, when all categories of symptoms have been resolved, the individual will have eliminated some of the major obstacles in reaching his or her potential in life, be on his way of resolving his or her feelings of alienation from others and society in general, and help him or her from mastering his or her habits, ideas, and desires. There will be no need to feel enslaved by his or her inability to express himself or herself verbally, or to turn -- like Somerset Maugham and John Updike -- to writing as an outlet. Other individuals -- like Bob Love and Ken Venturi -- will be able to turn to sports for the pure love of them, instead of as a means to compensate for their perceived deficiencies.

Third, the new, holistic definition of stuttering clarifies some terms used throughout the SLP literature that had not previously been clearly and operationally defined. For example, primary and secondary stuttering (cf. Van Riper (1973), Guitar (2006), and Manning (2001)), are better understood when they are referred to as symptoms respectively involving or not involving speech related muscles. The dissertator has added two new categories called “distortions of speech” and “suboptimal life choices”. The dissertator has also elevated emotions and cognitions to a more prominent place in the definition. As will be shown in later chapters of this dissertation, these are key concepts in the etiology and perseverance of stuttering.
However, it should be noted that because of long years of operating with a real or self-imposed handicap has left the stutterer with a lack of social skills and a set of mental habits that can be best addressed with further psychotherapy. As will be shown in chapter VIII, the stutterer will have mastered the elements of REBT. It is the hypothesis of the dissertator that further work with a compatible REBT therapist would lead the stutterer to overcome some of his or her predispositions to anxiety in general and social anxiety in particular.
CHAPTER V

CONSTRUCTION OF A NEUROPSYCHOLOGICAL MODEL OF STUTTERING
BASED ON SELECTIVE CURRENT LITERATURE

Introduction

In order to design an etiology and therapy it is necessary to construct a model of
where physiologically the stuttering problem resides – in the central nervous system. It is
not a function of the speech forming muscles. The vast literature in neuropsychology
needed to be reviewed and pertinent references given so that the reader can go to original
sources. Currently, there is no synopsis that is available focusing on the brain functions
and areas involved in stuttering.

The following section of this chapter gives the dissertator’s original overview of
factors in his model of stuttering. This is the basis on which the synthesis of etiology and
therapy—the next two chapters—are based. The following section provides the sources on
which the dissertator based his model. The final section of this chapter is a discussion of
the importance of this model of stuttering – why it is better than anything else so far
published on this subject.

Factors in the Theory of Stuttering

The neuropsychological literature does not talk specifically about stuttering
except for Logan’s (1999) book *The Three Dimensions of Stuttering: Neurology,
Behaviour, and Emotion*, with whom dissertator agrees on some points. However, the
dissertator has incorporated many other sources, updated some of the material, and
augmented it with his own observations to form a theory of stuttering that he believes is more robust and better informs forming a theoretical model of etiology and a theoretical model of therapy. Neuropsychology is an evolving science with many contradictory theories and findings and the dissertator had to use his judgment as to which references to use. The dissertator has based his model on readings in neuropsychology of speech and language formation, as well as the basics that describe how the brain operates, stores memories, and is biochemically modified. Using this material -- on speech, language and neuropsychology -- the dissertator has come up with the conclusions discussed in the following paragraphs.

**Language Production**

The dissertator has concluded that speech processing and voicing mechanisms in people with developmental CPSS are not damaged nor do they function significantly differently in non-stressful situations than those of a normal speaker. Although no formal studies have been conducted, the dissertator’s informed experience on various stuttering for a indicates that up to ninety-five percent of stutterers consider that they are spontaneously fluent or nearly so when speaking to themselves. The models that describe how speech is formed do not allow for having one set of areas of the brain activated when speaking alone as contrasted to another set when speaking with another person or in front of a group.

**Emotional Interference**

Based on a number of sources, the dissertator has concluded that speech and emotionality are intrinsically intertwined suggesting that excitability in stutterers interferes with speech production. From an evolutionary standpoint, as well as from the
study of phobic reactions, it appears that the desire to speak is influenced by the emotions. Since the limbic system is the seat of emotionality, especially fear, it is probably involved in interfering with the fine motor control needed to coordinate the physical speech producing mechanisms. The perseverance of stuttering also suggests that the amygdala—which is associated with classical conditioning of fear and stores memories in a hard to be extinguished form—is involved in stuttering. This in turn suggests that in order to overcome stuttering massive desensitization exercises are required.

Role of Cognition

The dissertator hypothesizes that although the fast emotional circuit that is associated with fight or flight is hard to extinguish, the slow circuit to override fear is available to monitor speech anxiety and establish at least managed fluency even though spontaneous fluency appears to be possible. The theory that reaction to fear is almost instantaneous, before any cognition can take place does not rule out that the pre-frontal cortex can be trained to control fear as, for example, tight rope walkers in a circus are able to do. Some high-performing athletes have also trained themselves to focus on the difficult tasks at hand and are not overcome by excess emotionality as have many law enforcement officers, military personnel, and martial artists.

Plasticity of the Brain

The dissertator is hopeful about stuttering therapy when conducted in a proper manner with copious homework exercises. He bases his optimism on the observation that throughout the lifespan, the brain can be biochemically modified to form new memories and to extinguish, to a great extent, old responses that were established by either classical
or operant conditioning. Long term memories, whether procedural -- those dealing with learned skills or conditioned responses -- or the subcategories of declarative memories: the semantic memory of knowledge of the world in general or episodic memories of personal experiences, can be altered through proper retraining. Even learned helplessness -- a frequent occurrence in the population with CPSS -- can be, with proper methods, unlearned. Thus, theoretically at least, developmental CPSS, as contrasted to neurological stuttering, can be altered through proper therapy procedures.

**Genetic Factors**

The dissertator hypothesizes that genetic factors that influence the development of stuttering are not deterministic, but may be reversed even after the genes have been expressed during the development of stuttering. This hypothesis relies heavily on the above discussion of the plasticity of the brain. The genetic factors, the dissertator argues, are associated with brain function and subject to biochemical modification of the brain via sensory memory, passing through short term memory, and, finally, solidified in long term memory.

**Need for In Vitro and Imagery Desensitization**

Since the pathways and synaptic connections in the limbic system are chemically modified via experiences or simulated experiences, cognitive restructuring, albeit necessary, is not sufficient to biochemically alter an individual’s reaction in a given situation. The subcortical structures, however, are malleable by the influence of experiential sensory information (visual, auditory, and internal body states) when mediated simultaneously by the cortex. With practice, people can project in their minds situations, bodily sensations, and emotions, and with the help of cognitive restructuring,
influence both emotions and bodily sensations. Maultsby (1971) designed Rational
Emotive Imagery around this concept. This would be a good tool for stuttering therapy to
employ.

Transience of Memory

Transience is a blessing for people who stutter. Whether due to successful therapy
or spontaneous remission, people who formerly stuttered recall less and less that they
ever stuttered and forget their self-destructive attitudes, self-defeating emotions, or their
struggles with speech. To achieve a true recovery, or an approximation of it, therapy had
best be designed in a way that does not require constant attention to speech.

Absent Mindedness

Absent mindedness is a fact of life. Because of absent mindedness, it is best not to
require an individual who is undergoing stuttering therapy to be forever vigilant of some
technique, some attitudinal or emotional state, or some process, such as disputing self-
defeating attitudes. The fallibility of persons needs to be acknowledged and not used to
instill perfectionism, guilt, or shame for forgetting to use the therapy tools at all times.

Blocking of Memory in Recalling a Word

Sometimes, in search of perfect speech, the stuttering therapist does not allow the
client to substitute a phrase or synonym for a feared name, even when the speaker truly
blocks recalling the name. Only the speaker himself or herself knows whether the
substitution was avoidance. The therapist is entitled to ask when he or she suspects that a
client is avoiding a word or a sound, but the therapist should not challenge the client’s
answer, unless there is overwhelming evidence that the client is prevaricating to avoid
facing reality. In pursuit of a cooperative effort and to avoid unnecessary conflict, the therapist is encouraged to not demand too much from the client.

The advice to the therapist in the above instances two instances amounts to watching out for unhealthy transference (“I will fail you”) and equally unhealthy counter-transference (“Your inability to perform to my expectations annoys me”) which can be sensed by the client. The client has probably experienced this in relationships with other therapists and may automatically switch into this type of thinking.

Memory and Misattribution

Starting with the hypothesis that neither the therapist, the client, nor the client’s family can ever know the exact source of onset of stuttering, it is best not to focus too much time and effort on the “real source” of stuttering. It is much more productive to try to establish what maintains the severity of stuttering in the present moment.

Memory and Suggestibility

The originators of suggestibility are the therapist or other important persons in a stutterer’s life. The lesson to be learned here is the desirability of the therapist allowing the client to explain his or her views of what the client believes, perceives, and feels. Then, together with the client, in a cooperative manner, use objective or operational methods to arrive at what is a plausible approximation of the truth. If a single vision cannot be arrived at, then the therapist can use some such phrases as “assuming that what you say is true” or “for the time being, let us assume that my hypothesis is true”. This allows for differences of opinion and does not lead to a therapy-interfering conflict.

In some instances, where differences of opinion exist, video and audio tapes can be used, remembering all the time that the past is really not that important in therapy; it is
the present belief system, present feelings, present behaviors, and present perceptions that propagate stuttering. Once a video or audio tape is made, it can come in quite handy to open-mindedly explore the different frameworks or views of a given topic or conjecture, always allowing that the past can never be really established due to the suggestibility that is inherent in all persons.

**Bias**

Since all of us have constructed social reality in our minds, we have also constructed biases. This pertains as much to the therapist as to the client. During stuttering therapy a lot of biases will surface. Some biases such as those about the role of therapist and client, the role of reading and homework in therapy, and those about the role of cognition versus skill in speech production in therapy are pertinent in therapy. The biases on whether the universe was created according to big bang theory or in seven days by a god, usually do not have direct implication for therapy. If the therapist prepares the client for the reality that both the therapist and the client will have biases, it is easier to handle these biases when they appear. When a bias has been identified, one of the best ways to approach it is to determine whether a) this bias is helpful in reaching the client’s goals, b) whether it can be tested empirically, c) whether it is logical, and d) whether one can discuss it with a sense of humor or distancing so as to be able to handle it in a more detached manner without getting into a confrontation.

**Persistent and Intrusive Memories**

Many persons who stutter have had experiences which have been socially traumatizing or have occurred in an environment so frequently that, when faced with a similar situation, past cognitions, physiological states, and emotional states are evoked.
The person who stutters is seemingly unable to alter his or her cognitions, emotional state, and physiological state. He or she believes that there is no way to escape these persistent and intrusive memories. It behooves the therapist and the client to openly talk about these situations and persistent and intrusive memories, and to cooperatively devise a plan, using all available methods, to lessen the impact of these memories. To help the client overcome persistent and intrusive thoughts, stuttering therapy had best be designed to use *in vivo* and role-playing desensitization, imagery of all types -- including Rational Emotive Imagery, and rewriting the client’s history using another framework to evaluate the situation. These methods will be discussed in more detail in succeeding chapters.

**Main Sources of Stuttering Model Factors**

Language and the act of speaking in all its intricacies are exclusive to human beings. Hence, meaningful knowledge can only be accumulated from actual studies of human beings. However, inductive hypotheses, even when not being able to be verified by experiments due to ethical considerations, are still a part of the scientific evolution of knowledge. Nolte (2002) corroborates the conclusion that information about human language -- and by inference, speech -- can only be obtained from human subjects. In contrast, we can obtain pertinent information about how motor and sensory systems operate from experimental animal studies.

Historically the data concerning which areas of brain are associated with which functions has been the result of lesions caused by unusual accidents or surgical procedures that removed tumors in the brain. Complete understanding of how language evolved, is learned, and consequently produced in the brain is beyond the capability of current brain scan technology. Yet brain scans give credence to some of the theories of
language development even though scientists are far from demonstrating their validity. The brain scan technology-- such as positron emission tomography (PET) scanning and functional magnetic resonance imaging (fMRI) -- is in its infancy. As yet, these technologies cannot determine which of the competing neuropsychology models is more correct. In order to enumerate factors that affect and contribute to the dissertator’s theory of the etiology of stuttering and are instrumental in devising the dissertator’s formulation of therapy, the following sources and main findings taken from the sources are given in the paragraphs that follow.

Wernicke-Gerschwind Model

Current textbooks (Kolb and Whishaw, 2003) admit to the absence of a clearly formulated and empirically validated model of how language is produced. However, the Wernicke-Gershwind model has played a dominant role in systematizing and coordinating research in the area of localization of speech functions and understanding language processing in the brain, as well as organizing the research results. Although this model is conceptually useful and provides the basic structure to localize functioning to various areas of brain, much of the current research is inconsistent with the model or adapts the model. Nevertheless, it serves as a starting point for research and as yet no better model has been proposed and universally accepted.

The Model Has Three Distinct Parts

Comprehending a word. The first part deals with hearing and comprehending a word. When a word is heard the brain directs it to area 41, the primary auditory cortex. Then the sound is transmitted further to Wernicke’s area where the sound and image of the word is comprehended.
Articulation of a word. The second part deals with the speaking (articulation) of the word. When a cognition initiates a meaning of the word it travels over the arcuate fasciculus to Broca’s area. Broca’s area contains representations of words to be articulated in terms of programs. The motor instructions for articulating words travel to the facial area of the motor cortex. Next these sequenced motor instructions are sent to the appropriate neurons in the brainstem to be relayed as commands to the facial muscles [and vocal folds].

Reading. The third part deals with reading. The written word is visually processed and the visual information is sent first to area 17 and then to areas 18 and 19. After it passes through the angular gyrus, the information ends up in Wernicke’s area where it is comprehended--read silently--or through Broca’s area for vocalization and reading aloud.

Discussion of Speech Mechanisms

Kolb and Whishaw (1996) provide a summary of what must be considered when dealing with neurological models of language:

Phoneme tags. The processing of language involves the capability to categorize and attach phonemic tags to objects which primarily are nouns. This appears to take place in circuits throughout the temporal lobe containing the basic circuitry for object recognition.

Two separate systems for visual and auditory language inputs. The visual and auditory systems are distinct. The visual system, which usually does not require phonological coding may, if required, access phonological analyses.

Production of syllables and transition from one syllable to another. Speech requires that the brain generates signals to produce syllables. This is the function of the
expanded pre-motor regions. The shifting from one syllable to another--it is hypothesized--includes circuits in the posterior parietal cortex. This is analogous to limb movements that are controlled by the circuits of the parietal cortex.

*Requirement for language grammar.* Language consists of both nouns and verbs. The nouns and their phonemic tags were discussed above. Likewise, the verbs are hypothesized to be the phonemic tags for movements. To make selection easier, it is hypothesized that the frontal lobe categorizes actions to make selection easier. This speculation was derived from the observation that the temporal cortex categorizes sensory information. The frontal lobe involvement in verb generation and syntax has been verified by both lesion and PET studies.

*Relative automaticity of language.* Mimicking and well-learned motor responses, such as driving, are considered to be automatic. Language can become relatively automatic after it is first learned. Evidence indicates that the two types of language input may involve different systems. The premotor and posterior temporal regions are involved in “cognitive” processes. On the other hand, the insular cortex may be central in producing automatic responses.

*Language and memory.* In order to process language we must be able to store and access words. Current theory states that nouns are stored in the posterior temporal cortex and verbs reside in the frontal cortex. In order to understand an ongoing conversation the brain must also store and access words in the short term. Based on studies where stimulation of the posterior regions resulted in disturbance of short-term memory of verbal material, it may be concluded that the posterior temporal cortex plays an important
role here. The currently held hypothesis is that verbal and auditory information are stored in separate regions.

**Roles of left and right hemispheres.** In a right-handed person, the left hemisphere plays the dominant role in language processing. The right hand hemisphere, nevertheless, plays the dominant role in prosody and is dominant in semantic processing. The left hemisphere is unique, though, because it appears to produce the syntax as well as producing and sequencing syllables.

**Experience and language representation.** It has been observed that, with experience, language representation changes. The distinction between words, pronounceable non-words, and meaningless consonant strings must be learned, because the meaningless consonant strings do not activate posterior temporal regions -- regions that are involved in processing words and pronounceable non-words. Another reason is that automatic and well-practiced verbal output requires processing in the insular cortex as contrasted to novel speech which is generated in the frontal and posterior temporal cortex. Furthermore, with the acquisition of language skills there is a reduction in the size of the posterior temporal speech area. The current hypothesis is that the increase of insular involvement may lead to a reduction in size of the posterior temporal speech area.

**Individual differences in cortical representation of language.** Both inter sex and intra sex variations of cortical representation of language have been observed. The intersex differences appear to be greater. On average, females appear to have a smaller posterior temporal involvement in language processing. Consequently, there appears to be more frontal and maybe insular processing in females. However, as stated above, there
is also considerable intra sex variation. This variation is important because it would provide a means for natural selection, at least historically.

**Conclusions**

Kolb and Whishaw (1996) conclude that it is not possible to point to an area of the brain and say that this is where we “see”, “remember”, or “produce speech”. Kolb and Whishaw (1996) observe that there are great similarities in how language, sensory, and memory functions are organized. Their first point is that language functions in the neocortex are not localized but involve considerable portions of the neocortex. Physiologically speaking, language processing is not something that was merely added to already existing or evolving brain functions. Language functions are distributed throughout the cerebrum. Secondly, it is apparent that language functions are distributed in multiple channels specifically dedicated to individual functions. Some channels process auditory material; others are involved in the processing of visual material. The channels that process nouns are different from those that are involved in generating syntax and processing verbs. Different channels are involved in processing spontaneously generated speech from those that are involved in automatic speech processing. There are even different channels that produce isolated phonemes and others that produce and sequence multiple phonemes.

**Furster Model of Language**

**Introduction**

The above discussion of the neuropsychological model of language was based on the currently popular paradigm in neuroscience that espouses a modular model of brain functioning. Furster (2003) proposed that this model is outdated and postulated a new
paradigm called network model of cognition. In his book he chronicles the shift of paradigms.

Furster (2003) summarizes the salient ideas of the network model of cognition and brain as follows:

“(1) cognitive information is represented in wide, overlapping, and interactive neuronal networks of the cerebral cortex; (2) such networks develop on a core of organized modules of elementary sensory and motor functions, to which they remain connected; (3) the cognitive code is a relational code, based on connectivity between discrete neuronal aggregates of the cortex (modules, assemblies, or network nodes); (4) the code’s diversity and specificity derive from the myriad possibilities of combination of those neuronal aggregates between themselves; (5) any cortical neuron can be part of many networks, and thus of many percepts, memories, items of experience, or personal knowledge; (6) a network can serve several cognitive functions; and (7) cognitive functions consist of functional interactions within cortical networks (pp x-xi).”

Furster (2003) compares the transition from modular to network cognition to transition from Newtonian to Einsteinian physics. In fact, modular cognition can be thought of as a special case of network cognition. He even notes that relativity has a role in network cognition, although it takes on a different meaning: “Any neural element of cognition derives its meaning from context and relations to others (p. xii).”

Language as Evolutionary Leap

Furster’s (2003) exposition starts by acknowledging that language, being unique to humans, implies an enormous leap in human evolutionary complexity of neural substrate over other animals. To explain brain organization, the author introduces the term cognit which he defines as an element of knowledge in the cerebral cortex, physically represented as a network structure in the brain, made up of assemblies of neurons and connections between them.
“Cognits, the networks of knowledge that I postulate in the cortex, have immense variety in terms of their information content, their complexity, and the nature of their components…It is the central tenet of this monograph that all cognitive functions [including language] consist in transactions of information within and between cognits (p.15)”.

**Built on mammalian communication.** According to Furster (2003) language developed to compliment the facial and bodily expressions that are evident in the communication of mammalian species. Evolutionarily speaking, there are two directions in which the substrate for communication can expand. The first evolutionary development is designed to help communication with other species. This consists of the upward growth of limbic structures and the paralimbic cortex. The paralimbic cortex consists of the cortex of the medial/cingulated and orbital frontal regions. The second development is instrumental in the development of language and consists of the lateral expansion of the neocortex of the two hemispheres.

**Functional dependence on limbic structures.** The neocortex develops from paleocortex and archicortex. This presages that language is dependent on limbic structures which lead to three major implications. First, motivation has a prominent role in language production. To wit, language production, with respect to initiation, production, and continuation, is heavily dependent on the emotional state and other internal drives.

Second, it is postulated that emotions have a strong influence, even overriding influence, on speaking. This is especially true when the limbic-subcortical system reasserts its supremacy during a weakening of neocortex functioning. Such is the case, for example, when a person is afflicted with Tourette’s syndrome and is subject to
emotional outbursts which are hypothesized to involve pathology of orbitofrontal regions of the brain. Another example is expletive outbursts under situations of unexpected stress.

Third, as supported by research conducted by Ploog (1981, 1992) on monkeys, which have an underdeveloped neocortex, vocal communication is controlled by limbic structures. Emotional and social behaviors in both humans and other primates are controlled by the orbitomedial prefrontal cortex, selected anterior nuclei of the thalamus, and the amygdala. This system of interrelated structures serves as the underlying basis for both social and emotional expression, as well as the early and partially developed stage upon which oral communication is based in the evolutionary process.

*Complexity and lateralization.* Furster goes on to present erudite arguments for the uniqueness of humans being able to learn the syntax of language, the complexity of connectivity required for true language acquisition, the uniqueness of neural structures in humans that support vocalization, and language development being correlated with motor skills. He then presents evidence for the left-hemisphere dominance theory in language development based on the phylogenetic structural similarity of the segment and on its common developmental origin with the older region of the left hemisphere which controls the manual manipulation of tools.

*Plasticity.* Despite the dominance of the left frontal lobe in speech production, there is considerable plasticity in the neural networks. This is evidenced by recovery of the ability to learn to speak after some large lesions in the left hemisphere have resulted in loss of speech. Ogden (1988) provides data that this is indeed so. The final evidence that speech functions have migrated to the right hemisphere has been provided by narcotizing the right hemisphere or by later lesion in the right hemisphere (Kinsbourne,
1998). However, language produced in the right hemisphere is deficient in syntax, semantics, or phonetics when compared to language produced in the left hemisphere.

**Damasio’s Contribution**

**Damasio’s Hypothesis**

Damasio (1994, 1999) presents the case that decisions, especially decisions requiring immediate actions, are made on an emotional basis mainly based on information stored in the limbic system. These decisions are sometimes called the “fast circuit” of decisions and derived from massive amounts of data that are stored in the preconscious and are not consciously thought out. The database for these emotions is acquired through experience and stored in the structures found in the subcortical regions.

Even “slow circuit” based decisions made in the prefrontal cortex regions are influenced by the emotional substrate. Experiments have borne out that positive emotions are associated with the left frontal lobe and negative emotions are associated with the right frontal lobe. Thus emotions cannot be separated from cognitive functioning.

**LeDoux’s Contribution**

**LeDoux’s Hypotheses**

LeDoux (2002) provides arguments to advance the view that personality lies in the synapses of the brain and CNS. In these synapses, the space between neurons, lie the channels which enable us to not only remember, but also send signals for our muscles to act and for us to be able to feel, think and even imagine future possibilities.

LeDoux explains how what we experience, do, and think change our synapses and, hence who we are. He demystifies the unconscious and simply states that much of
what happens in the brain is either not available to the conscious mind or, at least, would take effort to approximately reflect the state of the unconscious in the conscious mind.

He goes on to explain how these synapses can be modified via three main ways: 1) things we think, 2) things we do, and 3) the experiences which we undergo. All of these are coupled with feedback through the sensory systems, eyes, ear, skin, bodily sensations, etc. Above all, together with Damasio, LeDoux concludes that the brain and self are indivisible.

LeDoux (2002) emphasizes that, through evolution, we have learned certain archetypical ways of reaction, such as a horse’s reaction to a rope dragged on the ground. The horse reacts as if the rope is a snake and exhibits defensive fight or flight reactions.

**Schacter’s Contribution**

**Schacter’s Hypotheses**

Schacter (2001) looked at memory from the “black box” point of view examining the “seven sins” of memory. He discussed seven ways we forget or how our brain malfunctions to prevent generating an inaccurate memory. These seven ways are: 1) transience -- forgetting over time; 2) absent mindedness -- the lack of focusing of attention; 3) blocking -- the inability to recall a name on command; 4) misattribution -- the assignation of a wrong source to a memory; 5) suggestibility -- the implantation of false memories; 6) bias -- storing or rewriting memories based on currently held beliefs; and 7) the persistence of intrusive memories that impede proper functioning.
Logan’s Contribution

Logan’s Hypotheses

An interesting theory of stuttering is proposed by Logan (1999). His limbic model starts with an assertion, confirmed by LeDoux (1993a, 1993b), that once emotional memories and responses are classically conditioned, they are virtually indelible. Furthermore, the model Logan (1999) proposes is based on Halgren’s (1992) observation derived from a number of studies that show that the amygdala receives both visceral and cognitive inputs. The amygdala then evaluates these inputs before they enter our consciousness and are evaluated cognitively.

Summary and Conclusions

No single neuropsychological theory nor brain study that the author read included all aspects of CPSS etiology and the principles the dissertator used to develop the proposed stuttering therapy. Besides that, the dissertator had to select from hundreds of articles, textbooks, and studies a number of reasonable hypotheses upon which to build a comprehensive theory of the etiology and perseverance of stuttering. Three aspects of theory building need to be noted. First, although the theories described above are based on the study of both brain lesions and brain scan data, such as positron emission tomography (PET) scanning and functional magnetic imaging (fMRI), none of them are rigorously derived from a systematic examination of all the data available. Second, none of the theories account for all the data that has been accumulated so far. Because some of the data may be inaccurate due to experimental or historical errors, no single theory can be considered authoritative enough. Three, the field of neuropsychology is in its infancy and the hypotheses --of majority of the workers in the field as well as the dissertator--of
how the brain and memory functions works is based on the zeitgeist that mirrors how computers work. Since there are numerous points of view about how the brain works even among the experts, the importance of the dissertation is both in which authors and theories were included as well as which ones were excluded.
CHAPTER VI
ETIOLOGY AND PERSEVERANCE OF STUTTERING AS FORMULATED USING REBT FRAMEWORK FOCUSING ON IRRATIONAL BELIEF

Introduction

In this chapter the dissertator presents his original formulation of etiology--of how stuttering develops--and what mechanisms are at work to cause the stuttering to persist. The dissertator uses an REBT framework giving the plausible irrational beliefs. Currently, there is no detailed discussion of the stages which a stutterer goes through to develop CPSS. This chapter fills a significant void. The dissertator believes that without a detailed etiology no complete therapy can be synthesized to overcome CPSS.

The following section of this chapter gives the dissertator’s original overview of factors to be considered in the etiology of stuttering. This is followed by a section on the dissertator’s synthesis of stages in the development of stuttering in general and CPSS in particular. This section provides sources of the precursor hypotheses as documented in the current literature--scant as they may be—on which the dissertator based parts of his model. The final section of this chapter is a discussion of the importance of this model of stuttering – why it is better than anything else so far published on the subject.

Factors that the Dissertator included Development of Etiology of Stage Model of CPSS

The dissertator included genetic, neuropsychological, epigenetic systems theory and lifetime developmental factors in his formulation of the stages of the development and perseverance of CPSS. Both classical and operant conditioning--according to the
dissertator--play significant roles in the progression of CPSS. Using an REBT framework, the dissertator recognizes the key roles that beliefs, emotions, and habitual actions play in establishing and maintaining stuttering.

Because of the persistence of CPSS, the dissertator considers CPSS to be akin to a personality disorder. The dissertator posits that inborn temperament, behaviors, emotions and styles of thinking are shaped by genetic factors and play a large role in the development and perseverance of stuttering. Examining the various clusters of personality disorders in the DSM-IV-TR, the dissertator found that CPSS has most in common with cluster C personality disorders. The dissertator summarizes his hypotheses in table 6.1 “Characteristics and Main Irrational Beliefs of a Person with CPSS”. The table provides a categorization of Irrational Beliefs in five major categories: 1) demanding; 2) awfulizing; 3) low tolerance of frustration; 4) people rating; and 5) absolutistic thinking. The specific irrational beliefs examples are numbered so that they can be referred to in the next section and chapter VII.

Stages in Development of CPSS

*Introduction*

The dissertator believes it is important to provide a hypothetical timeline of stages that take place in the development of CPSS in order to demonstrate or hypothesize how stuttering-propagating beliefs or self-talk are initiated and then solidified. It is hypothesized that the more accurate the identification of irrational negative beliefs is, the easier it will be in therapy to help the client manage or eliminate stuttering, and to: a) design disputations of the irrational ideas, b) design homework to change the emotions, and c) design homework that gives intellectual insight into the process of stuttering
### Table 6.1

*Characteristics and Main Irrational Beliefs of a Person with CPSS (part 1 of 2)*

<table>
<thead>
<tr>
<th>Personality Disorder Like Characteristics of Persons with CPSS</th>
<th>Irrational Category</th>
<th>Main Irrational Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Perfectionistic&lt;br&gt; • Extremely controlled&lt;br&gt; • Rigid in thought and behavior&lt;br&gt; • Stubborn&lt;br&gt; • Demanding of others&lt;br&gt; • Feeling of inadequacy&lt;br&gt; • Dreading criticism&lt;br&gt; • Excessively fearing rejection&lt;br&gt; • Continually anticipating embarrassment&lt;br&gt; • Socially inhibited&lt;br&gt; • Low self-confidence&lt;br&gt; • Emotionally vulnerable&lt;br&gt; • Feelings of helplessness&lt;br&gt; • Fear of acting independently</td>
<td>Demandingness (D)</td>
<td>• I must not inconvenience other people (D1)&lt;br&gt; • I must talk like normal people (D2)&lt;br&gt; • I must speak perfectly fluently (D3)&lt;br&gt; • Other people must not look down on me (D4)&lt;br&gt; • I must be in total control of my speech (D5)&lt;br&gt; • I must avoid criticism and rejection (D6)</td>
</tr>
<tr>
<td></td>
<td>Awfulizing (A)</td>
<td>• It’s horrible to stutter (A1)&lt;br&gt; • It would be awful if others laughed at me (A2)&lt;br&gt; • It’s terrible that I can’t control my body movements (A3)&lt;br&gt; • It’s awful to have less-than-perfect speech (A4)</td>
</tr>
<tr>
<td></td>
<td>Low frustration intolerance (LF)</td>
<td>• I can’t stand criticism and rejection (LF1)&lt;br&gt; • I can’t stand my imperfect way of speaking (LF2)&lt;br&gt; • I can’t stand being stuck; anything is better than that (LF3)&lt;br&gt; • I can’t bear having others know that I stutter (LF4)&lt;br&gt; • I find business meetings and parties unbearable (LF5)</td>
</tr>
</tbody>
</table>
Table 6.1

*Characteristics and Main Beliefs of a Person with CPSS (part 2 of 2)*

<table>
<thead>
<tr>
<th>Personality Disorder Like Characteristics of Persons with CPSS</th>
<th>Irrational Category</th>
<th>Main Irrational Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Perfectionistic</td>
<td>People rating (PR)</td>
<td>• Fluent speakers are superior to people who stutter (PR1)</td>
</tr>
<tr>
<td>• Extremely controlled</td>
<td></td>
<td>• In order to be worthwhile I must not stutter (PR2)</td>
</tr>
<tr>
<td>• Rigid in thought and behavior</td>
<td></td>
<td>• Stutterers are losers (PR3)</td>
</tr>
<tr>
<td>• Stubborn</td>
<td></td>
<td>• People who put me down for stuttering are no good and deserve to be punished (PR4)</td>
</tr>
<tr>
<td>• Demanding of others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Feeling of inadequacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Dreading criticism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excessively fearing rejection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Continually anticipating embarrassment</td>
<td>Absolutistic thinking (AT)</td>
<td>• There is nothing that can prevent me from stuttering (AT1)</td>
</tr>
<tr>
<td>• Socially inhibited</td>
<td></td>
<td>• Nobody wants to hang out with someone who stutters (AT2)</td>
</tr>
<tr>
<td>• Low self-confidence</td>
<td></td>
<td>• Only perfect speech is acceptable (AT3)</td>
</tr>
<tr>
<td>• Emotionally vulnerable</td>
<td></td>
<td>• Nobody and no therapy can help me (AT4)</td>
</tr>
<tr>
<td>• Feelings of helplessness</td>
<td></td>
<td>• All people are turned off by my stuttering (AT5)</td>
</tr>
<tr>
<td>• Fear of acting independently</td>
<td></td>
<td>• Anything is better than not being able to get out immediately what I want to say (AT6)</td>
</tr>
</tbody>
</table>
and homework to flood and modify the brain with new interpretations based on current observations.

Following are the more or less distinct stages in which the CPSS develops. At each stage certain events, both external and internal, take place. The external events include cultural, family, and individual social factors. The internal events are based on the interaction of genetic, current and historically-formed synapses with environmental factors and developmental processes. These interactions result in specific modes of perception, cognition, emotion, and behavior. At each stage there are negative CPSS producing or aggravating factors that lead to more severe CPSS and those that ameliorate, counteract, or even extinguish the formation of CPSS.

**Genetic Make-Up Stage (Individual Genotype Stage)**

*Description*

Dent-Read and Zukow-Goldring (1997) describe the epigenetic systems theory as based on research that points toward the interaction of the environment with the genetic endowment of the individual. The individual inherits his or her genes from a species genotype pool via selective adaptation in that more adaptive genes become more common, while those that are detrimental to survival tend to disappear. The individual genotype that is present in one zygote at conception is based on the accident of one’s father and mother.

*CPSS Producing or Aggravating Factors*

These factors include the inheritance of genes that produce the slow development of speech, and genes that contribute to both state and trait anxiety. The occurrence of these factors in people who stutter has been established in the literature conclusively and
is discussed in the section of literature review elsewhere in this dissertation. The dissertator posits that these factors play a significant role in the development and perseverance in CPSS. The dissertator posits that some other characteristics, like those in cluster C personality disorders (see Table 6-1), also play an important role in maintaining CPSS. Although this hypothesis has not been established by research, the author will demonstrate its plausibility when discussing the perseverance phase below.

**CPSS Ameliorating and Extinguishing Factors**

Genes that contribute to normal and timely speech development and rational thinking (i.e. non-hysterical, goal-oriented, calm, and highly cognitive versus emotional thinking) help an individual to not develop CPSS. If the individual experiences stuttering-like disfluencies, these genetic factors help the person overcome or ameliorate his or her stuttering-like behaviors.

**Discussion and Conclusions**

The natural tendency of females to develop speaking skills earlier than males is reflected in research that has shown that males are more likely than females to stutter. Berger (2001) clearly distinguishes between genes that are inherited by the person, whether expressed or not (genotype), and traits that are inherited--behavioral tendencies, emotional tendencies, and physical characteristics that are present in the individual (phenotype). Thus, it becomes obvious that although a person may have inherited the tendency to stutter and potentially develop CPSS, he or she will not necessarily do so.
Pre-Natal Stage

Description

During the gestation period, the embryo may experience various stressors such as toxins due to what the mother ingests, good or bad nutrition, and stressors--both physical and hormonal. All of these are beneficial or detrimental to the embryo/child. According to the epigenetic theory: a) some genes become weaker; b) others become stronger; c) theoretically some genes form clusters that give the unborn child different characteristics, and d) some genes even stop functioning altogether.

CPSS Producing or Aggravating Factors

Any lack of necessary nutrition, and/or ingestion of poisonous substances in excessive amounts--such as nicotine, alcohol, or other prescription or street drugs--can have a deleterious affect on both the child’s ability to learn to talk and his or her ability to cope with adversity if the child experiences speech development difficulties. Both physical and emotional stressors on the mother may affect the development of the embryo in a full-term baby.

CPSS Ameliorating and Extinguishing Factors

It is hypothesized that a well-exercised mother consuming a healthy diet would provide the optimal environment for the child’s development. Furthermore, some experts believe that calm conversation, rhythmical sounds of the mother’s heart, and music transmitted through the mother’s womb provide the child with a healthy pre-natal environment.
Discussion and Conclusions

Before the birthing process, a number of genes and genetic interactive clusters have already been developed or stopped functioning. The body of an about-to-be-born infant has already been subjected to a more or less benevolent environment, either helping it to develop or hindering its development. It may well also happen that while a baby is in the womb, the trauma is so severe as to cause neurological damage. It is important to note it here because it may well turn out that there is no clear delineation between neurological and developmental stuttering. Next, the birthing process will be examined.

Birthing Stage

Description

Birthing is fraught with many possible adverse effects, one of which is voluntary or involuntary prematurity, either due to the doctor’s choice to induce labor or the mother’s inability to carry the child to full term. Deprivation of oxygen during the birthing process, especially when the umbilical cord is entangled around a baby’s neck, is a very real possibility and may have an effect on, or delay, speech development, as well as reducing the ability of the child to cope effectively with the resulting problems.

CPSS Producing or Aggravating Factors

As mentioned above, the deprivation of oxygen endangers or delays speech development; and it endangers the self-regulating of beliefs and emotions when faced with a difficult task. To the best of the dissertator’s knowledge, no studies have been made on the effect of prematurity—either voluntary or as a physical necessity—on the
likelihood of developing stuttering problems, but the dissertator allows for this possibility.

**CPSS Ameliorating and Extinguishing Factors**

An uneventful birthing process, at an optimal time, probably would help the baby to have normal speech. Moreover, if there were speech difficulties encountered, the proper brain chemistry and connectivity afforded by an uneventful birthing would facilitate more successful coping and self-soothing.

**Discussion and Conclusions**

It has been established that some types of cerebral palsy are due to oxygen deprivation when the umbilical cord becomes wrapped around a baby’s neck during the birthing process. Studies should be pursued to determine whether there is a tendency to stutter after a child is deprived of oxygen during birthing. It would be also important to do some retrospective studies correlating premature birth and the child’s ability to learn to talk properly and handle emotional distress when difficulties are encountered.

**Early Language Acquisition Stage**

**Description**

Noam Chomsky (1976) proposed the theory that people are born with a brain that is innately organized to learn how to use language. MacNeilage (1998) observed that humans use syllables made up of constants and vowels. Yairi and Ambrose (2005) state that the onset of stuttering occurs between 20 and 48 months of age. This is well after a child starts to use syllables to express himself or herself such as “ga-ga” and “goo-goo”. It is interesting to note that language development proceeds through phases of saying “ma-ma” and “da-da” during early language development, and in some languages -- such
as Hawaiian and Estonian, and to a lesser degree in other languages -- remain as part of
the vocabulary even in adulthood (cf. papa in English, mamma in Latvian, etc.). In order
to define stuttering, Yairi and Ambrose (2005) use the *stuttering-like disfluencies (SLDs)*
and frequency of occurrence, as perceived by the listener, to define stuttering. The
dissertator notes that in the early language-acquisition phase, all persons have SLDs and,
hence, with the first effort to talk, normal SLDs are the rule and not the exception.

*CPSS Producing or Aggravating Factors*

Yairi and Ambrose (2005) note astutely that stuttering might well have disfluency
factors, which some people are not able to grow out of, as well as personality factors.
Both of these are presumably genetic, but influenced by environmental factors such as
parental and grandparental anxiety about speech development progress. The dissertator
posits that in the early language acquisition stage, the child learns from messages that
come from the environment. Since modeling is one of the most common ways in which a
child learns, the aggravating “messages” from the environment, and the internalization of
these messages, will be examined without placing blame on the parents or grandparents.
In REBT, one of the basic principles is to not blame or damn any person because all of us
are merely Forever Fallible Human Beings (FFHBs) who, no matter how hard we try,
cannot attain perfection or even anything close to it. If the therapist addresses these
topics, she or he needs to be very careful to do so in a blame-free manner.

*Messages transmitted by the environment.* Yairi and Ambrose (2005) allow for
the possibility that personality traits may be learned as well as inherited. Thus, when
parents are hyper-vigilant regarding a child’s speech, the child may sense this. Especially
damaging may be the tendency of parents to correct the speech of their child.
**Internalized beliefs.** The child internalizes the belief that there is something to be wary of while speaking and that some corrective measures may need to be taken when speaking. This is the exact opposite of the playfulness ideally associated with all learning processes.

**Self-defeating habits.** If there is any self-defeating habit that a child may take away from this period, it would be the habit of taking speech too seriously.

**CPSS Ameliorating and Extinguishing Factors**

The desired approach would be for the parents to be very playful and to avoid self- or other-consciousness about speaking. The more playful experimentation that is involved the better.

**Discussion and Conclusions**

The dissertator posits that, even at this early stage, the child can learn some bad habits, associating speech with an over-serious and potentially dangerous situation. The child’s natural spontaneity may be impacted.

**Language Development Difficulty Stage**

**Description**

Yairi and Ambrose (2005) define a *point-of-entry* stage: when a parent, caretaker, or listener observes that the frequency of SLDs in the child, when measured on a probability scale, surpass those of an average child. “…[C]hildren considered to stutter are inclined to exhibit interruptions in the flow of speech in the form of repetition of parts of words (e.g., sounds and syllables) monosyllabic words, as well as disrhythmic phonations – that is, prolongations of sounds and arrests of speech (blocks) (p. 20).” It is at this time that the parents usually take a child to be evaluated by an SLP.
*CPSS Producing or Aggravating Factors*

The child himself or herself may not be aware that there are problems with his or her speech. Unless the child is extremely sensitive, there may be a long period before he or she becomes aware that he or she has problems with his or her speech. Personality traits then play a big role in determining how a person handles his or her problems with his or her speech.

*Messages transmitted by the environment.* When a child is evaluated by professionals, he or she may not be aware of the reason he or she is being examined. If the child is extremely sensitive and observant, the message he or she may hear is that some things, besides the ordinary things in life, are happening. But he or she may choose to ignore the significance of these events.

*Internalized beliefs.* If the child is truly unaware of his or her difficulties, he or she may not form any specific, internalized beliefs.

*Self-defeating habits.* There are no apparent bad habits at the language development difficulty stage.

*CPSS Ameliorating and Extinguishing Factors*

If the parents of the child are sensitive, handle the situation with tact, and the therapist is indeed unobtrusive, the child need not be damaged. The best advice at this stage is to let the child take turns with other children in the family and have some relaxed one-on-one time with each of the parents, where he or she can be playful and experiment with speaking while experiencing unconditional self-acceptance.
Discussion and Conclusions

The literature is replete with instances of therapy being done only with the parents and not the child. The child need not be aware of his or her disfluencies.

Awareness of Speech Difficulty Stage

Description

The next stage occurs when a child becomes aware that he or she has difficulty in speaking. This awareness can come from external or internal factors.

CPSS Producing or Aggravating Factors

How the child treats stuttering depends on his or her personality traits. Impatience or anger at self or others aggravates the development of stuttering.

Messages transmitted by the environment. As Johnson (1959) so aptly described in his diagnosogenic theory of stuttering, the child is often made aware of his or her stuttering in such a way as to cause distress in the child. He or she can be admonished to talk slowly, to take their time, and even punished for not talking properly.

Internalized beliefs. It should be noted that there are a limited number of basic irrational beliefs that are formed in the various stages of the development of stuttering. These were summarized in table 6.1 and divided in main categories. As the dissertator describes the stages in the development of stuttering, he will refer back to these, giving both the general category and the specific irrational belief. The child can say to himself or herself: “I can’t stand my imperfect way of speaking” (Table 6.1; irrational belief #LF2); “I must speak perfectly fluently” (Table 6.1; irrational belief #D3) or “I must be in total control of my speech” (Table 6.1; irrational belief #D5). These types of self-talk will lead the person to frustration.
Self-defeating habits. At this time he or she may choose to consciously insert starter phrases such as “actually”, “um”, etc.

**CPSS Ameliorating and Extinguishing Factors**

On the other hand he or she may view the difficulty with a passing curiosity and not get caught up in obsessing about it or using starter phrases compulsively.

**Discussion and Conclusions**

Awareness of having difficulty with speech fluency is not in itself a bad thing. Where the difficulty comes in is if the child, because of his or her inborn personality traits or because of external disapproval, starts to have irrational beliefs which lead to feelings of frustration intolerance and some potentially self-defeating habits.

**Comparison with Others Stage**

**Description**

Although at some stage in evolution it may have been important that a person know his or her place in a social structure, currently self-comparison with other people leads to low conditional self-esteem and is counter productive in gaining unconditional self acceptance. Thus, when due to external or internal factors a person starts to compare his- or her-self to others, it presages difficulties.

**CPSS Producing or Aggravating Factors**

In the case of stuttering, the comparison to other people is almost always negative. Although there have been some popular songs that include stuttered words, and a popular financial TV show that has people, when calling in, congratulate the host with a stuttering “booyah”, most of the time stuttering is considered an undesirable characteristic.
Messages transmitted by the environment. Even if a parent or a caretaker does not use words to spell out semantically that “you should talk like your brother or sister or other children” the demand is implied. There is the constant message “Why don’t you talk like normal people do?”

Internalized beliefs. The child comes away with a demand: “I should talk like a normal person” (Table 6.1; irrational belief #D2).

Self-defeating habits. This results in the person comparing himself or herself to other people, a pernicious habit indeed.

CPSS Ameliorating and Extinguishing Factors

Some parents are indeed very accepting and, even though they talk to the child about his or her stuttering, they reassure the child that they love him or her just the same and that he or she can make a success of their lives. Sometimes introducing them to other children who stutter normalizes the child’s feelings about himself or herself. This is done frequently in NSA conferences.

Discussion and Conclusions

It is best to acknowledge to a child that he or she indeed may have a problem with their speech. At the same time it is good to distinguish between the child and the problem.

Definition as “Something is Deficient about Me” And Labeling Stage

Description

The stage following comparison is when a person starts to define himself or herself as a stutterer. He or she first decides that there is something essentially wrong with them, not merely something idiosyncratic and somewhat handicapping. Then they
attach a label to this condition thereby assuring that a) it is something over which they have no power and b) that their worth is tied to this aspect of themselves. He or she essentially defines himself or herself to be a problem.

**CPSS Producing or Aggravating Factors**

Korzybski (1933/1990) clearly explains that labeling oneself as one specific characteristic, especially if that characteristic has connotation of deficiency, is very self-limiting. This especially holds true for self-labeling oneself as a “stutterer”. Wendell Johnson (1961), who was also a General Semanticist, understood this. However, many of his followers who chose the phrase People Who Stutter (PWS) clearly missed the point; PWS is still no better or worse than stutterer. Each of us is an individual, and only one small part of us is associated with stuttering. We do many more things than just stutter.

*Messages transmitted by the environment.* Labels are shorthand expressions that within some context are valuable because of efficiency, even at the cost of accuracy and collateral damage. The message that the parents give a child when calling him or her a stutterer is that he or she is locked into a mode of behavior that forever determines his or her destiny. Worse yet are insensitive teachers and classmates, who seemingly divide the world into persons who stutter and those who are normal. The worst is when a person who sometimes stutters is relentlessly teased or bullied because of his or her stutter.

*Internalized beliefs.* At this stage a number of irrational beliefs take root: a) “It is horrible to stutter” (Table 6.1; irrational belief #A1); b) “Fluent speakers are superior to people who stutter” (Table 6.1; irrational belief #PR1); etc.

*Self-defeating habits.* At this stage a person who stutters starts to avoid words, sounds, and situations where he or she is likely to stutter.
CPSS Ameliorating and Extinguishing Factors

One of the best antidotes at this stage is the introduction of the child to other children who stutter. This introduces the child to the motto of the NSA: “If you stutter, you are not alone.” Also letting the child know about various current and past successful people who stutter tends to take some of the stigma of the label away.

Discussion and Conclusions

Due to the unfortunate expediency for assigning labels to people, a child gets labeled as a stutterer or a Child Who Stutters. An in-depth conversation pointing out to the child that he or she is much more than his or her stutter and introducing him or her to other children who stutter tends to take away some of the unpleasantries and consequences of the label.

Classical Conditioning Associating Speech with Danger and Anxiety Stage

Description

Not all stages are sequential. Some of the following stages occur in parallel with the above stages. One of the stages is the classical conditioning of associating a speaking situation with anxiety and danger. Thus, specific speaking situations evoke anxiety which, in turn, interferes with fine motor movement generation, as in speaking.

CPSS Producing or Aggravating Factors

Pavlov (1927) was able to make dogs salivate at the sound of a bell using classical conditioning. A child is similarly conditioned to become anxious, indeed petrified, when having to talk in certain situations. Conditioning takes place over a long period of time. First by rebuke of a parent or a sibling. Then by teasing and bullying. Afterward, a child is embarrassed in front of other people by his or her inability to talk.
Messages transmitted by the environment. The constant background in a child’s life is punishment and the anxiety associated with the act of speaking. The intermittent nature of the punishment only makes it more durable and engraved in the synapses. The child’s sensitivity and other cluster C traits make him or her more easily intimidated by speaking situations.

Internalized beliefs. The speech-stuttering-anxiety-punishment spiral lends itself to the formation of the following type of beliefs: a) “It would be awful if others laughed at me” (Table 6.1; irrational belief #A2); “It is awful to have less than perfect speech” (Table 6.1; irrational belief #A4), etc.

Self-defeating habits. Due to the arousal of anxiety, the child is unable to perform normal speaking—which he can do on his or her own in absence of other people—in certain, many, or most situations. The extent of his or her stuttering is an individual characteristic.

CPSS Ameliorating and Extinguishing Factors

The wise parent, teacher, therapist, and understanding friend provide the child with speaking situations where it is easy for him or her to speak. Johnson (1961) called this “building up a fluency base.” He also encouraged his clients to speak volumes while alone.

Discussion and Conclusions

Although classical conditioning does build a strong association between stuttering and anxiety/punishment, it does not have to be permanent. The next chapter will explain how techniques, such as structured voluntary stuttering, are able to extinguish the link between speaking and anxiety.
Operant Conditioning of Forcing/Struggle in Speech Stage

Description

Once a person’s speech flow is frequently interrupted by block, repetitions and prolongations of speech, and the person is aware that this is an undesirable state, he or she becomes both anxious and impatient to move on. When stuck, he or she may sometimes find that forced sounds will eventually get them over the stoppage. This results in operant conditioning of the struggle, forced speech, and avoidances.

CPSS Producing or Aggravating Factors

As if classical conditioning -- tying the speaking to anxiety -- was not potent enough of a handicap to disrupt normal forward moving speech, operant conditioning also comes into play. The activating mechanism is the release from being stuck. No matter what a person does when he or she becomes unstuck, the synapses in the brain associate this with the success.

Messages transmitted by the environment. Other people who are listening and watching often feel discomfort in sympathy. When the discomfort is gone, both they and the speaker sense a relief.

Internalized beliefs. One of the driving beliefs is “I can’t stand being stuck”. (Table 6.1; irrational belief #LF3)” Another is, “Anything is better than not being able to get out immediately what I want to say”. (Table 6.1; irrational belief #AT6)”

Self-defeating habits. This starts self-defeating forcing/struggling habits that become reinforced (or conditioned) in the synapses controlling the fine motor movements of speech production.
Some children have been able to understand and evaluate their experiences with forcing so thoroughly that it really becomes apparent to the cognitive brain that this is totally counterproductive.

*Discussion and Conclusions*

Perkins (2000) believed that the profession should learn from naturally occurring spontaneous remissions. Techniques to accomplish this will be discussed in the next chapter.

*Operant Conditioning of Secondary Symptoms Stage*

*Description*

A more pernicious operant conditioning occurs when the person who stutters coincidentally blinks, purses his or her lips, jerks his or her head, and/or snaps his or her fingers. Since the sound eventually comes out, the bizarre secondary symptoms are operantly reinforced. The contortions a stutterer undergoes are determined by his or her accidental squirming, tapping, or even more bizarre behaviors. Since all of these habits are operantly reinforced and not associated with conscious thinking, they are hard to break. All types of avoidances and circumlocutions fall into this same category.

*CPSS Producing or Aggravating Factors*

Many of the same factors that are active in the operant conditioning of forcing and struggling behavior are also present in the operant conditioning of secondary symptoms.

*Messages transmitted by the environment.* The discomfort of the listener is palpable in the presence of a full blown stutterer with secondary symptoms. Both the listener and the speaker want the stuttering situation to end as soon as possible. When the
conversation is over, both the stutterer and the listener are relieved. The stutterer senses the relief in the listener and, thus, gets reinforced from the listener’s reaction as well.

*Internalized beliefs.* The stutterer often goes into a type of shock called *petit mort* (Van Riper, 1973). It means that before the speaking situation, during the speaking situation, and after the speaking situation the stutterer more or less escapes the awareness of his or her bizarre behavior, so there is no negative feedback to counteract his or her bizarre secondary symptoms. There is only the reward once the speaking situation is over.

*Self-defeating habits.* These odd contortions and secondary symptoms are limited only by the personal experience of the individual who is speaking. These extraneous movements really do not have anything to do with producing speech.

*CPSS Ameliorating and Extinguishing Factors*

Some people who have undergone spontaneous remission have been able to do so by looking at themselves in the mirror and voluntarily re-enacted the movements which heretofore appeared to them to be involuntary. Often they have exaggerated them and found them to be totally under voluntary control and, thus, easily modifiable.

*Discussion and Conclusions*

Secondary stuttering symptoms make a person who stutters appear to be spastic or have St. Vitus dance-like qualities. On the one hand they are the most bizarre part of stuttering, on the other hand they are the most readily modified, if and only if the client is willing to look at himself or herself in the mirror and then do *in vivo* exercises that emulate these supposedly uncontrollable movements.
Speech Situation Choice, Avocation, and Vocational Choice Stage

Description

As a person reaches adolescence, his or her choices of which situations to enter are limited by his or her beliefs that the pain of the situation is not worth the possible gain. Often people choose occupations which are not commensurate with their talents. Nor do they search out social situations among equals or those who have the same interests as they do. Many people do not date at all or, when they do, they settle for what they themselves believe is less than their optimal choice.

CPSS Producing or Aggravating Factors

All the life choices and situational choices are, in the short range, rewarding because the stutterer does not have to undergo immediate pain. In the long run these choices preclude a person from actualizing his or her talents, forgoing their goals, and giving up the most rewarding part of their existence on this earth.

Messages transmitted by the environment. The constant message that the person with CPPS gets is “Do not bother me with your problems. Stuttering, especially the way you do it makes me uncomfortable, and you have no right to make me uncomfortable.”

Internalized beliefs. The stutterer internalizes the message transmitted by the environment. Moreover, he or she creates another message in their heads that says, “All people are completely turned off by my stuttering” (Table 6.1; irrational belief #AT5). “It is terrible that I can’t control my body movements” (Table 6.1; irrational belief #A3). “I can’t stand criticism and rejection” (Table 6.1; irrational belief ##LF1). “Stutterers are losers” (Table 6.1; irrational belief #PR3). “Nobody wants to hang out with someone who stutters” (Table 6.1; irrational belief #AT2). “I find business meetings and parties
“unbearable” (Table 6.1; irrational belief #LF5). “I must not inconvenience other people” (Table 6.1; irrational belief #D2).

Self-defeating habits. As a result of these irrational beliefs the stutterer withdraws from his or her life as much as they can. They settle for being alone and they take jobs that do not challenge them.

CPSS Ameliorating and Extinguishing Factors

If the person with CPPS is exposed to assertiveness training and understands that on this earth he or she comes first and other people come a close second, they can, even at the expense of inconveniencing other people, pursue their goals. There are some hardy souls who really do go after what they want regardless of the inconvenience to themselves or others.

Discussion and Conclusions

The first priority of a good therapy is to tackle this issue: Everyone has the right to pursue his or her own happiness.

Iatrogenic Traumatization and Hopelessness Building Stage

Description

Many therapies do more harm than good for a given individual. “One size does not fit all.” When a therapy neither directly nor indirectly changes the irrational beliefs in Table 6.1, feelings of guilt, shame, and anxiety have a strong chance to remain. Because the therapy has failed, new feelings of helplessness and hopelessness may be added and the client, in effect, may be traumatized by the therapy and define himself or herself as worthless.
**CPSS Producing or Aggravating Factors**

Perkins (2000) states that for a significant portion of adults, the current therapies have failed. Because of the nature of these therapies, they induce in-clinic successes and less-than-sustainable fluency outside of the office; this can be very damaging.

*Messages transmitted by the environment.* The subtext of most of therapists is, “I showed you how to talk fluently in the office, now it is up to you to go in the real world and talk fluently out there.” Most therapists, according to Perkins (2000), are not sophisticated enough to understand that what they did throughout the therapy is desensitize the stutterer so they can talk in the therapy office. They really did not teach an individual how to talk; the client was already able to talk by himself or herself before they came into the office.

*Internalized beliefs.* The client walks out of therapy with the following beliefs: “Only perfect speech is acceptable” (Table 6.1; irrational belief #AT3). “Nobody and no therapy can help me” (Table 6.1; irrational belief #AT4). “In order to be worthwhile I must not stutter” (Table 6.1; irrational belief #PR2). “I can’t bear having others know that I stutter” (Table 6.1; irrational belief #LF4). “I must avoid criticism and rejection” (Table 6.1; irrational belief #D6).

*Self-defeating habits.* The client keeps on escaping the challenges and rewards of life fully lived. Often he or she becomes a practical recluse.

**CPSS Ameliorating and Extinguishing Factors**

Chance encounters with people at various stages of recovery and stuttering management may convince the person to re-examine their own beliefs, sometimes out of sheer desperation.
Discussion and Conclusions

Bungled therapy is one of the major causes of suffering by those not helped by it. Help can be defined as getting the client to get more involved in life, to manage his or her stuttering, or truly cure the stuttering where it becomes only a historical footnote in his or her life. The next chapter will address all three of these aspects.

Reaction Stage

Description

During this stage the person with CPSS reacts to the incompetent therapy, the failures in life, and becomes embittered. He or she may turn his or her aggression outward.

CPSS Producing or Aggravating Factors

Rightfully the “experts” have failed him or her. However, not being totally self-immolating he or she now turns to the environment to blame others in order to preserve some sanity.

Messages transmitted by the environment. The people in his or her closest circle either pity him or her or blame him or her for his or her failure to learn to talk properly. The adjusted person does not want either.

Internalized beliefs. He or she resorts to defensiveness. The main internalized beliefs at this stage are: “Other people must not look down on me” (Table 6.1; irrational belief #D4). “People who put me down for stuttering are no good and deserve to be severely punished” (Table 6.1; irrational belief #PR4).

Self-defeating habits. Some persons turn to corresponding on list servers. These provide a medium to rail against all therapy and the hope that anything can be done about
therapy. The message “There is nothing that can be done about my stuttering” (Table 6.1; irrational belief #AT1) is constantly being re-enforced. If a correspondent does not follow the party line he or she is often banned from the medium.

**CPSS Ameliorating and Extinguishing Factors**

At this stage other persons turn to the NSA. Fortunately, the NSA not only supports its motto “If you stutter, you are not alone”, but provides in their annual gatherings a platform for workshops both by professionals and lay persons to expound on what has helped other people and what has helped them.

**Discussion and Conclusions**

As Albert Ellis said, “Mostly I refrain from downing others and the world. However, sometimes I slip up. However, I never down myself or blame myself. I am not that crazy.” This expresses the sentiment of the dissertator also. If one feels the need to down somebody, it is never a good idea to harshly come down on your own self. It is hard to change under all of the pressure.

**Productive Therapy Stage**

**Description**

The dissertator allows for the possibility that there are other therapies (besides the one that he will describe in the next chapter) that might be able to deal with CPSS. However, he believes that the one he will describe will be the most effective and efficient for either managing or curing stuttering. Here “stuttering cure” is defined as being able to talk with a) the probability and severity of speech disruptions well within the range of a normal speaker; b) the absence of preoccupation with possible stuttering and not
exhibiting the symptoms of a covert stutterer; c) pursuing avocational and vocational life choices without regard to stuttering, and d) generally not thinking about stuttering at all.

**CPSS Producing or Aggravating Factors**

The end result of good therapy is the elimination of all internal factors that contribute to production or aggravation of stuttering. When these factors are external, the person who has undergone a productive stuttering therapy can handle them before they invoke stuttering, or emotions that were formerly associated with stuttering.

*Messages transmitted by the environment.* The teasing and bullying may not cease for the adolescent or young adult. The older adult may be exposed to intimidation by those who want to take advantage of him. There may also be well meaning friends or members of his family who, not knowing that he or she has indeed overcome his or her stuttering, would try to prevent the former stutterer from undergoing any hurt or harm should he or she get over his or her head in a vocational or avocational situation. Another situation that frequently occurs in psychotherapy is that the individual’s spouse or significant other cannot deal with the new independence of the cured stutterer and desperately tries to put the person back into a dependent position. This can be a conscious or a pre-conscious process.

*Internalized beliefs.* The next chapter will describe new self-actualizing beliefs, how they are established, and how they are maintained.

*Self-defeating habits.* Similarly, new functional and goal-achieving habits will be described in the next chapter.
CPSS Ameliorating and Extinguishing Factors

Success usually breeds success. However, human frailty needs to be taken into account and a booster session or two in therapy may be necessary.

Discussion and Conclusions

The productive therapy stage—often a life long stage—ends with the client becoming his or her own therapist. The client terminates the therapy with an understanding about the fallibility of all human beings, the knowledge that lapses are expected, and an unconditional self, other, and world acceptance. No longer is stuttering the main concern of his or her life, mainly because of his or her rewriting of his or her own narrative, but also because he or she has been able to have spontaneous or managed fluency most of the time. The next chapter of this dissertation is devoted to how the therapist and the client can collaboratively arrive at this goal.

Importance of the Etiology Stage Model

In order to comprehend what the therapist and the person with CPSS have to unravel and change during the process of therapy, a timeline/stage model is necessary. Only by understanding the etiology can the therapist and client collaboratively design a therapy process that addresses all the necessary aspects in an effective and efficient way. The stuttering literature, so far, has not included a detailed and clearly understandable model of etiology. The consensus appears to be that stuttering is of unknown etiology. Although the dissertator’s proposed model has not been empirically verified, the plausibility of this etiology comes from epigenetic systems theory of development, neuropsychology, REBT, and the classical and operant conditioning literature.
CHAPTER VII
REBT OF CPSS

Introduction

In this chapter—the crucial chapter of the dissertation-- the dissertator presents his original formulation of stuttering therapy for people with CPSS. This chapter is informed by the last chapter where the dissertator presented an original stage-based etiology of stuttering. The dissertator uses an REBT framework to guide the therapist through the steps of therapy. Currently, there is no detailed discussion of the stages which a stutterer goes through to develop CPSS. This chapter fills a significant void. The dissertator believes that the detailed etiology in the last chapter informs the therapy steps and how these steps should be done.

The following section of this chapter gives the dissertator’s overview of the principles in therapy, which is followed by a section on the dissertator’s synthesis of steps in therapy of stuttering in general and CPSS in particular. The final section of this chapter is a discussion of the importance of this model of stuttering therapy. First it discusses the differences and then the rationale as to why this approach is better than anything else published on the subject to date.

Overview of Therapy

*Insights*

The third generation of REBT, based on a collaborative, individualistic approach applied to stuttering therapy is grounded on four insights. First, that a problem such as
stuttering inevitably consists of both genetic components and historically aggravating events that culminated in certain undesirable speech patterns, dysfunctional belief systems, and unhelpful emotional patterns. This observation is buttressed by the epigenetic systems theory of development.

Second, the Irrational Beliefs that one created or acquired about stuttering at the various stages described in the last chapter both aggravate stuttering and maintain it. Exploring with the individual how these Irrational Beliefs were generated by both genetic factors and outside influences and lead to specific Irrational Beliefs helps the client to get a good background for the next insight.

Third, after the client knows there are indeed physical causes and environmental influences for his or her stuttering, emoting, believing, and acting (as well as perceiving of other’s people’s reaction) and that the above factors are clearly supported and propagated by specific Irrational Beliefs, it is purposeful to change these beliefs through persistent questioning and disputation, which is accomplished in words and thoughts, as well as through in vivo exercises (involving other people). Beliefs and the biochemical structure of the brain are two sides of a coin. The beliefs mirror the physical and chemical structure of the brain. The physical structure-the synaptic connections-are evolved through genetic and environmental factor interaction. In the epigenetic systems theory of development, these genes and the effect they have on the synapses in the brain can be strengthened, weakened, or rearranged in other clusters to facilitate modification of the brain throughout the lifetime. This is then the task that the client/therapist collaboration has to accomplish.
Establishing of Therapeutic Alliance

Introduction

All therapies benefit from a strong therapeutic alliance which is generally established by the third or fourth session, but which can be later ruptured. Having a warm therapeutic bond is not enough.

Agreement of the goals in therapy. In a collaborative therapeutic alliance the client usually defines what he or she wants the therapy to accomplish. The therapist is a strong participant because he or she has the experience to know what was achieved by other clients in therapy using various therapeutic techniques, which were not limited to REBT.

Agreement on the tasks and roles in therapy. In a collaborative therapeutic alliance the client is acknowledged to be the expert of himself or herself. Although the client’s observations about himself or herself may be biased, the client’s observations about himself or herself are used as the starting point. The therapist acts as an unbiased observer who can offer other interpretations of what the client has experienced. The advantage that the therapist has is that he or she knows what has and has not worked for other people in this situation. Although he or she may not have had personal experience, the therapists should have a mentor and should have studied enough cases and research studies to have a good feel of what works and what does not.

Because of the different areas of expertise, the client and therapist need to delineate the tasks that each of them is responsible for. Miller and Rollnick (1991), in their description of Motivational Interviewing, provide a framework where the therapist gives the client a menu of choices and a reason why certain choices are more desirable.
than others. The client is the final decider of which items in the menu he or she wants to tackle first. However, the client and the therapist need to agree that if certain choices do not produce the desired result, a different approach is needed.

Warm, trusting relationship. It is of paramount importance to establish a bond between the client and the therapist. This consists of acceptance of each other as persons and an ability to give honest feedback to each other so as to evaluate what is and is not working. Many therapies refer to this bond as the therapeutic relationship, but without the above two items, it is not entirely valid.

Understanding of all financial arrangements and termination process. The dissertator believes that agreeing on all financial arrangements and establishing a tentative point of exit ahead of time helps both the client and the therapist to be more open and honest. Not everyone can afford the gold deluxe version of therapy and termination may come even when the therapist deems it to be premature. However, if the parameters are understood, both the client and the therapist can try to optimize their time together. Upon termination it is necessary to summarize what has and has not been achieved and outline plans how the client can finish his or her therapy on his or her own. If the therapist’s input is needed, arrangements should be made as to how the client can re-enter therapy or, at least, get a booster session.

Background Information on Therapy Dimensions and Steps

Therapy Dimensions

Therapy addresses the client’s emotions, his or her primary and secondary stuttering behaviors, his or her Irrational Beliefs, his or her perceptions about stuttering, and his or her life choices. Although the client comes into therapy usually wanting to
work first on his or her stuttering behaviors and perhaps emotions about stuttering, the therapist should try to rearrange the priorities as follows.

*Identifying and working on irrational beliefs about stuttering and stuttering therapy.* With the help of the stuttering developmental model described in the last chapter, Irrational Beliefs can be traced back from emotions about stuttering, specific stuttering behaviors, and even faulty perceptions and life choices. The “how to” of working on these beliefs will be described later in this chapter.

*Identifying and working on unhelpful negative emotions.* Every person has a different mix of the unhelpful negative emotions of guilt, shame, helplessness, hopelessness, anxiety, etc. Another dimension of therapy is to bind these emotions to specific beliefs and systematically eliminate them via disputing, Rational Emotive Imagery (REI), and systematic role play or *in vivo* homework (as described later in this chapter).

*Identifying and working on primary and secondary stuttering behaviors.* Only after self-talk and emotionality is addressed properly are the primary and secondary stuttering behaviors identified, exaggerated, desensitized, and modified. Struggling, forced blocks and disruptions are replaced by easy, minimally disruptive “Iowa bounces” or other stuttering therapy techniques. Secondary stuttering behaviors which appear to be involuntary are made to be voluntary, exaggerated, and desensitized both privately in front of a mirror and finally in public. Then they tend to disappear on their own, because the stutterer has learned to voluntarily exaggerate, control, and alter them.
Perceptions. The perceptions of others or of oneself about stuttering are addressed throughout therapy. A clear line of demarcation between an easy Iowa bounce and a struggling, forced speech is established.

Life choices. Similarly, life choices are addressed throughout therapy. The emphasis here is that the stuttering need not change in order to start making more challenging life choices. However, as all the other dimensions change, the challenging life choices have more of a chance of success.

Stages of Change

Introduction. Trans-theoretical research has found that it is advantageous to view changing habits through the lens of the stages of change model (Prochaska, Norcross, & DiClemente, 1994). The dissertator has adapted the names of the stages to be more descriptive. Since stuttering involves a number of cognitive, emotional, avoidance, and behavioral habits, the stages of change model needs to be understood by both the client and the therapist with respect to what takes place in each of the stages and what the tasks of the client and the therapist are in each stage. In each of the stages of change the motivational tasks of the therapist are described based on work by Miller and Rollnick (2002).

Therapist’s motivational tasks in the pre-contemplation stage. Most people who have Chronic Perseverative Stuttering Syndrome (CPPS) have given up on stuttering therapy or psychotherapy to help them cope with stuttering. If these people appear in therapy, it is because someone in their family or work situation has insisted that they search out help. Miller and Rollnick (2002) advocate that the therapist has to first discuss the undesirability of the current behavior. The therapist needs to instill some hope that
change is possible. The therapist also gives positive feedback of something that the client
did well and compliments him or her on it. Active listening helps, as does building a
therapeutic alliance, so that the client is motivated to come back.

*Therapist’s motivational tasks in the contemplation stage.* Clients who are
seriously thinking about therapy are in the contemplation stage. They are still doubtful if
therapy can help them, but they are willing to investigate the possibility. The therapist
discusses with the client the disadvantages and risks of not engaging in therapy
wholeheartedly, as well as the potential benefits of therapy and change in their speaking
pattern, be it managed fluency or spontaneous fluency. The objective of the therapist is to
tip the scales in favor of wholeheartedly participating in therapy. In this stage the client
finds out about the client’s strengths, emphasizes them, and creates in the client a sense
of self-efficacy. The client may have ambivalence about therapy. The therapist and client
discuss the pros and cons. The therapist points out that the status quo is in conflict with
the client’s goals and dreams.

*Therapist’s motivational tasks in determination stage.* At this stage the therapist
and the client need to openly discuss the best option for the client to accomplish whatever
he or she desires to change. The expected outcome is openly discussed. The therapist
needs to get the client’s commitment to do his or her part in therapy. The therapeutic
alliance needs to be fortified.

*Therapist’s motivational tasks in action stage.* The therapist helps the client in
taking the steps in therapy that are described below by describing these steps. The
therapist and the client focus on the plan and adjust it as necessary. The therapist must be
aware of what the client is willing or unwilling to do outside of the clinical setting and
what he or she is ambivalent about. If, in the action phase, the client still has ambivalence, the therapist must address it. The emphasis of this stage is to find the barriers to change. Then the client and the therapist must brainstorm how to overcome these barriers.

*Therapist’s motivational tasks in maintenance or stabilization stage.* Once a client has learned to manage his or her stuttering using the steps below, the therapist needs to help the client assume full responsibility for his or her stuttering. The therapist explains to the client that lapses, in both self-talk and the use of techniques, are the rule, not the exception. The therapist motivates the client to not turn a lapse into a relapse. The therapist helps the client to keep a pulse on his or her beliefs and facilitates discussions that there may be some disfluencies in speech and, thus, keeps the client working to modify his or her brain so as to remain desensitized toward speaking situations and having some disfluencies.

*Therapist’s motivational tasks in termination stage.* The client may terminate formal therapy when he or she has discovered how to be his or her own therapist. If there is a relapse, the therapist needs to motivate the client to return for a refresher session. Frequently the client runs out of money; it is then that the therapist needs to motivate the client to continue the therapy steps on his or her own.

*Therapist’s motivational tasks in relapse and regrouping stage.* Prochaska, Norcross, and DiClemente (1994) in their stages of change model propose the last stage to be the termination stage. However, in the field of drug and alcohol abuse, as well as stuttering, relapse is a common occurrence. Actually, all psychological changes are subject to many cycles of lapses and relapses. Thus the Relapse and the Regrouping stage
needs to be added. The therapist motivates the client to renew the processes of the contemplative, determination, and action stages first on his or her own and then, if necessary, with the help of the therapist. The real goal in this stage is to make sure that the client does not become demoralized and that he or she does not succumb to the feelings of hopelessness and helplessness.

*Therapy Steps*

Every client is an individual; he or she has an individual configuration of Irrational Beliefs, emotions, primary and secondary stuttering behaviors, perceptions about stuttering, and life choices. The dissertator believes that certain steps of therapy best be performed in the order given below. However, some clients have a predefined image of what therapy should be and may have to be accommodated, as long as they understand that each of the steps are appropriately addressed at some time or another.

**Typical Sequence of Therapy Steps**

*Introduction*

In truly collaborative constructivist REBT no two therapies run the same course. There are important reasons for this. First, every client and every therapist has constructed their social reality differently. Second, every client and every therapist brings different abilities and modes of operation to therapy. Third, every client presents an idiosyncratic combination and severity of Irrational Beliefs, of primary and secondary stuttering behaviors, perceptions about stuttering, and life choices. Fourth, every client may be in a different psychological space due to outside circumstances. Fifth, every client has their history of failures in self- and other-directed therapy. The reasons go on and on.
Nevertheless, there are some commonalities among clients with CPSS. And if wisdom or advice is to be passed from one person to another some structure is needed. What follows are typical steps of therapy that are recommended to be addressed in the given order, but may be sequenced in a different order.

*Listening to the Client’s View of Goals and Processes in Therapy Step*

*Introduction*

In the dissertator’s opinion the most important step of therapy is an honest interchange between the client and the therapist about the goals of the therapy. The client may come into therapy believing that the therapist will do his or her thing and the stuttering will disappear, rendering the client, who has now been freed from his or her shackles of disfluent speech, able to accomplish great things and become everything he or she has dreamed to be.

*Letting the Client Express Himself of Herself*

The dissertator believes it is important that the client expresses himself or herself first. The therapist needs to actively listen and to understand how the client has constructed his or her reality and what his or her aspirations are. The client must know that he or she has been heard.

*Goals and outcome.* Every client comes in with his or her set of goals ranging from becoming a perfect speaker and a politician (as with Joe Biden), to managing his or her stuttering well enough and become the leader of industry (as with Jack Welch), to getting over his or her negative feelings of shame, guilt, and anxiety about stuttering and ceasing to be a covert stutterer. Sometimes the client will start by saying, “I just want to stop stuttering.” The latter statement needs a lot of clarification, since some clients really
believe that they need to become perfect speakers without any disfluencies at any time; they want to become more fluent than so-called normal speakers.

Process of stuttering therapy. Most people have a clearly formed opinion how stuttering therapy “should” proceed. Sometimes it is based on their previous therapies, which can be used by them to establish in their minds what therapy should or should not be. At other times the image of what stuttering therapy “should” be has been obtained from an article in popular media, an advertisement on the internet, a book, or a discussion with another person. Again, active listening and questioning is necessary to establish a clear image of what the client is thinking about.

Client’s role in stuttering therapy. Often when a client is asked what his or her role in therapy is, they are quite confounded. They really have not given it much thought. It is important that the therapist, in questioning, does not lead the client even with Socratic questions. It is important to find out what a client’s natural predisposition is. Does he or she want to ponder and discover things by himself or herself or does he or she want to absorb didactic teachings in the shortest time possible? Every person has his or her learning style and the client may be asked how he or she learns in other environments. Equally important is for the therapist to find out how the client has mastered skills in the past and how much self-discipline and tolerance for frustration he or she has.

Therapist’s role in stuttering therapy. Often when a client is asked what the therapist’s role in therapy is, they also have no clear idea. If a client has had past therapy, he or she may either react against the role that the therapist took or they may embrace it. Sometimes the client’s ideas of the role of the therapist come from popular media,
including the internet, or what they have been told by other people. It is important to find out what a client’s expectations are so that the therapist may explain what can take place in a way that the client understands and is more likely to mesh with the therapy model. In general, it is good to know the client’s natural reaction to an authority figure, which, after all, a therapist is to a greater or lesser extent.

*Reaching a Therapeutic Alliance with the Client Step*

*Introduction*

The therapist has a choice of two approaches. One approach is to get involved early on in addressing the clients concerns and educating the client of the various aspects of therapy while the client explains his or her views. The other approach is allowing the client to describe his or her understanding of the therapeutic process and then negotiating with the client on the various points. The dissertator generally prefers the first approach. It is to be noted that the therapist will have asked the client for permission to record the sessions so that the client can take sessions home and review them in order to come back with follow-up questions. Sometimes the therapist may also want to listen to the audio tapes or see the video tapes to learn from. Generally, in the signed permission to tape the sessions, a request is included to use the material for scientific research with all identifying demographic data removed. During these discussions the therapist needs to actively listen to the client and address his or her comments.

*Reaching an Understanding with the Client*

After the client has felt to be understood and heard, it is necessary to negotiate an understanding of the various aspects of therapy. In REBT these are rather well defined,
but minor adjustments can take place. The therapist has to be convincing enough to
persuade the client to go along with him or her on the major points.

Goals and outcome. The therapist, after having heard the client’s aspirations,
explains that the constructive and collaborative REBT therapy of CPSS has stepwise
goals. First, teach the client to accept himself or herself unconditionally with or without
his or her stuttering. Second, learn how to manage his or her emotions about stuttering by
learning to think more rationally in a way that will not sabotage his or her goals. Third,
learn to manage his or her stuttering more effectively. Fourth, learn to have less and less
disfluencies that require management. Fifth, learn to pursue his or her chosen vocational
and avocational goals. Sixth, become more and more in charge of his or her therapy
eventually becoming his or her own therapist. Seventh, become creatively involved in life
outside of oneself by choosing vocations and avocations that give him or her satisfaction.
Eighth, have long periods where the probability of frequency and severity of stuttering
has reached a point where an outside observer will not be perceived to classify him or her
as a person who stutters. Figure 7.1 serves as a good starting point for discussion.
Although the therapist cannot guarantee that all these goals can be perfectly achieved, the
probability of success is high. Success is dependent on how hard the client works at
modifying his or her brain through self-assigned homework exercises. At first the
therapist will help the client design the homework, but later the client, as a self-therapist,
should be able to act independently.

Of course, one has to allow for the possibility that in rare cases the outcomes may
not be all that exemplary due to genetic factors, both in parts of the brain which control
speech, and in personality traits which affect the anxiety and ability to persist at a task.
Figure 7.1. Fluency Fluctuations. The region of spontaneous fluency is increased. The thresholds of spontaneous and managed fluency are lowered.
However, if a client has a history of being able to talk fluently when he or she is alone, there should be no persistent genetic component preventing the ability to train oneself to talk fluently—albeit imperfectly-- in the presence of other people. To establish how fluent a client is, he or she can record a series of voicemails to himself or herself in an environment where there is absolutely no chance of anyone else hearing the voicemail before it is erased. As for the genetic predisposition to be anxious, this can usually be eliminated by thorough desensitization. A lack of persistence, also called low tolerance of frustration, can be handled using REBT. The client will have to understand that all this may take time and effort. As for attaining other life goals, these too will not happen magically just because one stops stuttering, but will have to be systematically planned out and then pursued with vigor.

*Process of stuttering therapy.* The collaborative constructivist REBT of CPSS process has the best results when the goals of stuttering therapy are pursued sequentially as enumerated above and the steps of stuttering therapy as described below. It starts with the therapist being a teacher and demonstrating various modes of thinking and behaving, while the client tries to duplicate them. It is to be understood that most of the therapy takes place outside of the office and has to be performed by the client carrying out various specific tasks called homework, such as reading, keeping a journal, and doing various speech exercises. The week has 168 hours and only one of these are spent with the therapist in the office. In an optimal case another hour and a half is spent in a group setting on the premises. However, no meaningful change can be expected if this is the only time the client spends on his or her speech. As the process goes on, the client assumes more and more responsibility over assigning himself of herself therapy
homework. All REBT and stuttering therapy is essentially self-therapy with respect to
time and effort extended. The therapist is only a teacher and a coach who knows what has
worked for other people, who guide the client, corrects him or her when necessary,
provides inspiration, and serves as a sounding board. If the client lacks the assertiveness
to impose upon others while he or she performs homework assignments, acquiring this
skill set will also have to be included in the stuttering therapy.

_Client’s role in stuttering therapy._ The therapist states, then repeats again and
again, that the client is responsible for his or her own therapy. Unless the client learns to
understand REBT principles, raises questions when in doubt, does his or her homework,
and experiments on his or her own, the therapy will go nowhere. From the first session,
the therapist tries to instill in the client that there is a huge difference between being
responsible and self-blame. Assuming responsibility inspires the client to work harder;
self-blame hinders therapy and ultimately may lead to counteract all the gains made in
therapy. Self-blame leads to guilt, shame and self-deprecation. Responsibility and follow-
up on ones assignments leads to a feeling of self-efficacy. The therapist freely states that
therapy is hard work, but the work is not too hard for the client. The therapist draws out
instances when the client has persisted at hard tasks and constantly reassures the client
that temporary setbacks result because all people are Forever Fallible Human Beings
(FFHBs), who often take two steps forward and one step back. There may also be
instances when we take three or four steps back, but all of these are only learning
experiences.
Therapist’s role in stuttering therapy. The therapist’s role is to first convince the client through plain talk, counseling, or using the appropriate psychological REBT techniques the following three concepts:

a) “If anything goes wrong in the therapy I, the client, am not to be blamed; but it is my duty to bring up to the therapist that the therapy is not going well and discuss with the therapist what we can do better.”

b) “Yes, therapy is hard; but it is not too hard for me, the client. However, if I am struggling I should discuss with my therapist how to make the therapy easier.”

c) “I can accept myself unconditionally, whether I stutter or not. I am more than my stuttering. I am a unique human being who has worth—who can enjoy life—whether I stutter or not. But I do not like stuttering. It has practical disadvantages. I will work hard to be able to have more and larger islands of spontaneously fluent speech. And the rest of my speech will be managed fluency.”

The therapist’s goals will be to convince the client that the role of the therapist is to make sure that the client can understand the reasoning behind these concepts, and to ensure that the client understands them as the therapist does.

However, the therapist needs to explain his or her education and experience in REBT and stuttering therapy. This includes formal, informal, and self-directed learning. The outcome of this type of therapy should be clearly discussed and all questions answered to the best of the therapist’s ability. If there is no real outcome data, this should be specified but buttressed with anecdotal data and plausibility arguments. Ethically, it is more important to be honest and accurate than having a deep resumé that is fraught with ambiguities. A doctor’s degree in psychology or the SLP-CCC credentials may signify
very little. A primary certificate in REBT, a membership in ASHA Special Interest Division Four on Fluency and Fluency Disorders (SID-4), attendance to workshops on REBT and stuttering therapy, and presentation of workshops in REBT and stuttering therapy are much more meaningful measures. Also meaningful are availability of a supervisor or a consultant who is an acknowledged REBT practitioner and a SID-4 accredited specialist. Unfortunately, this will not always be the case, but being a member of SID-4 or a subscriber to an REBT list-server (Stutter_Less_With_REBT in Yahoo Groups) with ample self-educational reading may have to suffice. Having seen REBT and stuttering therapy videos or DVD’s serves this purpose.

As a minimum, the therapist should have read this dissertation where the various steps of REBT as applied to CPSS are clearly explained. The therapist also has the roles of teacher, coach, and cheerleader. Since many clients have been rendered helpless or hopeless by previous stuttering therapies, the duty of a therapist to act as a cheerleader cannot be undermined.

As a teacher and coach, the therapist must explain, and help the client through, the various steps of therapy. Sequentially, the therapist must teach the principle, demonstrate it in a meaningful context, assign doable homework assignments, and finally check on the results of the homework exercises to assess the progress being made. Any and all problems in the flow of the therapy must be addressed and handled by the therapist in collaboration with the client.

As the therapy progresses, the therapist must yield his or her active-directive role and let the client take over the responsibility for his or her homework assignments. The
sophistication of the client and the client’s personality traits determine how fast the therapy progresses and how fast the client can begin to be his or her own therapist.

*Overview of REBT and Its Application to CPSS Step*

*Solving the Emotional Problems First*

The REBT approach to stuttering therapy is based on first using REBT to solve the emotional problems that give rise to stuttering and then solving the fluency problem. Most of the time, when the underlying emotional problems are solved the disfluencies are drastically reduced both with respect to frequency and severity. Most of the time some of the standard stuttering therapy exercises will have to be used, but with a different emphasis—the emphasis of changing the belief system, not the emphasis of “learning to handle disfluencies” or “learning a new way of speaking.” After all, most of the developmental stutterers know quite well how to speak as evidenced by their fluency or relative fluency when speaking alone to themselves.

*Basic Philosophy of Constructivist REBT*

The therapist needs to teach the client the basic philosophy upon which constructivist, collaborative REBT is built. How detailed the explanation is will depend on the sophistication of the client.

*Constructing and de-constructing the world.* Every person constructs an image of physical and social reality in his or her head based on both innate tendencies (such as exaggeration, for example) and experiences that they undergo. Meanwhile, in parallel the society he or she lives in has constructed a social reality and a physical reality. By social reality, it is meant how people behave, how they should behave, what is expected of them, etc. Constructed physical reality in a person may differ considerably from person,
to society, and finally, to the knowledge accumulated in science. An example is a child believing that the world was created from a lotus bloom, the society he or she lives in believes that it was created in seven days as spelled out in the bible, and science may hypothesize that the world is several billion years old. The basic principle of constructivist REBT is that even in science nothing is ever known with 100% certainty as it pertains to either social or physical reality. The image of social and physical reality is stored in a human’s brain and can be accessed in consciousness as a set of beliefs. Sometimes it is necessary to reconstruct these beliefs from emotions and actions an event evokes. An equally important concept to the construction of one’s reality is that different experiences, including living experiences, Gedanken experiments, and didactic teaching, can and will change the person’s construction of reality. This process is called deconstructing of the social and physical reality.

*Certain social constructions are more helpful in attaining a person’s goals than others.* Along with constructing a reality in his or her head, every person either internalizes the goals of the environment or constructs them in reaction to the environment. Constructivist REBT maintains the client’s right to pursue his or her goals and allows that a person can put himself or herself a little bit ahead of other people. However, for maximum happiness, he or she should have enlightened self-interest, which means that he or she should also consider what the desires of other people in his or her social group are.
Rationality as Compared to Irrationality (Helpful versus Unhelpful)

Although REBT uses the terms rational and irrational some clients and therapists prefer to use helpful and unhelpful. Either way the therapist best explain to the client that some acts and ideas are rational/helpful and others are irrational/unhelpful.

Based on goals. In order to define what is rational/helpful it is best to give the frame of reference. In REBT the frame of reference is with respect to ones goals. Rationality a) helps a person to achieve his or her goals; b) is based on social reality (how people act); c) has an integral part unconditional acceptance of the evolving, changing, live entity called self (however, disliking some characteristics and actions of self); and d) not demanding the impossible (not even thinking of putting demands and commands on life since no mortal individual runs the world, others, or even some aspects of self such as being fallible and having inherited a given set of genes).

How is this possible? To be rational and act rational a person has to: a) have a sense of proportion of the importance of events, an understanding of the vanity of life, and have a good sense of humor; b) existentially understand that life’s meaning is not absolute, but is created or adopted by the person living it; c) strive to understand reality (things that happen in the real world and can be empirically validated); d) be able to use logical thinking; e) act and think in a flexible manner (as opposed to depending on absolute truths—which do not even exist in science); and f) be pragmatic – ask if a given idea or action is helpful or unhelpful -- in obtaining his or her goals and satisfying his or her priorities.
Irrationality is the opposite of rationality. Irrational ideas and actions are not adaptable or moderate, but rigid and extreme. The person does not take into account empirically validated facts, but builds on absolutistic notions about the world without basing them on evidence. Instead of acting in a logical manner, understanding that some things are ruled by the laws of probability and others can be deduced or induced from existing empirical evidence, the individual holds unto dogmatic beliefs. Such persons are generally without a sense of humor and assign ultimate importance to every event. They try to control the world, others, and themselves by placing musts or shoulds on everything and everybody. This results in them not being able to productively work toward their goals and enjoy life to the fullest.

Use of the ABC Framework

Ellis, from his earliest writing and lecturing, came up with an ingenious framework for the explanation of REBT practice. As currently expressed (Ellis and Abrams, 2009) it boils down to a simple formula: A x B => C. In this formula A stands for activating event; B stands for a person’s belief about the activating event; and C stands for consequent emotions (that lead to consequent actions). The lower case x implies that the activating event evokes the belief about the activating event. The “=” is defined as “causes” or “leads to”. In terms of stuttering, the A could stand for a teenager being called upon to speak in a classroom. The B is the teenager believing that this is a hard situation for him or her and that he or she usually stutters in this type of situation. The C is the emotion of anxiety which results if, on this belief, he or she also attaches some evaluative belief that it is awful and/or that it makes him or her a less worthwhile
human being. The emotion of anxiety then results in the agitated teenager actually stuttering. In other words A and B together cause C.

**Further explanation of ABCs.** A initially was defined as the confirmable reality of the situation. Usually this could be captured by a video camera. Sometimes, though, the activating event is an event internal to the client, such as a thought just popping into a person’s head. In current theory (Dryden, et al, 2003) A also includes the person’s interpretation and inferences about the activating event.

B are the evaluative beliefs that the person has constructed about A. There are five main categories of rigid irrational beliefs:

The first category is demandingness, which linguistically can be found when a person uses the words must, should, and have to. This implies that one can have the power to run the universe, others, or self. That perfection is possible and that the speaker—in public or in self-talk—is the arbiter of what reality is. In stuttering it shows up as “I must speak perfectly fluently” (Table 6.1; irrational belief #D3); “I must not inconvenience other people” (Table 6.1; irrational belief #D1); etc.

The second is awfulizing. Although awful is often used, other words such as catastrophe, horrible, and terrible are used synonymously. This means that a person takes a given situation and defines it to be so bad that it should not even exist and then concludes that he or she can never be happy again because of it. In stuttering it shows up as “It is horrible to stutter” (Table 6.1; irrational belief #A1); “It would be awful if others laughed at me” (Table 6.1; irrational belief #A2); etc.

The third is low frustration tolerance. In this case, the person concludes that he or she absolutely cannot stand being frustrated. He or she believes “that they will just die” if
he or she is frustrated, often resulting in giving up a goal.) In stuttering this shows up as “I can’t stand criticism and rejection” (Table 6.1; irrational belief #LF1); “I can’t bear having others know that I stutter” (Table 6.1; irrational belief #LF4); etc.

The fourth is people rating (deprecation) of self and others. This category can also extend to rating the conditions of the world. Frequently the person ends up rating the world as totally devoid of value. The devaluation leads to extreme unhappiness. In stuttering this shows up as “Stutterers are losers” (Table 6.1; irrational belief #PR3); “In order to be worthwhile I must not stutter” (Table 6.1; irrational belief #PR2); etc.

The fifth is absolutistic thinking. This is sometimes called also black or white thinking. The person ends thinking in all or nothing terms. He or she cannot see graduations in conditions or the gray areas that exist between the proverbial black and white evaluations. This leads to assigning extremes to situations and overgeneralization. In stuttering this shows up as “Anything is better than not being able to get out immediately what I want to say” (Table 6.1; irrational belief #AT6); “Only perfect speech is acceptable” (Table 6.1; irrational belief #AT#); etc.

On the other hand, when a person thinks in a rational, flexible manner without demands or commands, that person thinks in terms of desires, preferences, wants and wishes. The conclusions about events are then non-extreme and rational.

Instead of demanding that things go the way the person knows they should, the person holds strong preferences and works towards getting what they want. In this way the person will be more willing to work toward their goals instead of just giving up. He or she will be calmer when things do not go their way. Instead of saying to themselves “I must speak perfectly fluently” (Table 6.1; irrational belief #D3) the person concludes “I
would highly prefer to talk fluently or at least more fluently, now what do I do to achieve that goal” Likewise, instead of believing “I must not inconvenience other people” (Table 6.1; irrational belief #D1), he or she observes “Even though I dislike inconveniencing other people, I have the right in order to obtain my goals sometimes inconvenience others.

Instead of awfulizing and catastrophizing the person will conclude in an anti-awfulizing and anti-catastrophizing manner instead of thinking that “It is horrible to stutter” (Table 6.1; irrational belief #A1) it is more productive to think “It truly may be inconvenient to stutter, but it is not awful or horrible to stutter”. Likewise instead of thinking “It would be awful if others laughed at me” (Table 6.1; irrational belief #A2) he or she would think “I certainly would not like that others laughed at me, but it would not be awful.”

Instead of believing that he or she cannot stand frustration, he or she gets a higher tolerance for frustration. “I can’t stand criticism and rejection” (Table 6.1; irrational belief #LF1) becomes a belief “I can stand criticism and rejection, even though I do not like it. Now what do I do to get less criticism and rejection. “I can’t bear having others know that I stutter” (Table 6.1; irrational belief #LF4) likewise becomes “Although I might not like that other know that I stutter, if it helps me to communicate better, and get more of my goals, I surely can stand to let others know that I stutter.”

Instead of people rating and devaluing and deprecating self, others, and life when something goes wrong and rating it as totally bad, the person can see both good and bad in everyone—including himself or herself—and in the world. The person accepts that everyone—including himself or herself—is complex and forever changing, making
mistakes, and sometimes correcting them. He or she may not like some actions and characteristics of people—including himself or herself—and things in the world, but they can accept both the people and the world without giving them a globally bad rating. Thus, instead of believing that “Stutterers are losers” (Table 6.1; irrational belief #PR3) the rational person says to himself, “Stuttering, only one characteristic about me, is deficient, but I am not a deficient person.” Also, no longer does a rational person believe “In order to be worthwhile I must not stutter” (Table 6.1; irrational belief #PR2); instead he or she admits to themselves that “In certain situations I might perform better if I would not stutter but, I can define myself as worthwhile, whether I stutter or not. My performance is not me—especially not my performance at speaking, since there are so many other things I do with various degrees of success.”

Instead of absolutist, black or white thinking the person can see graduations in conditions or the gray areas that exist between the proverbial black and white evaluations. This leads to assigning extremes to situations and overgeneralization. No longer does a person believe that “Anything is better than not being able to get out immediately what I want to say” (Table 6.1; irrational belief #AT6), but is able to understand that there are consequences that have to be taken into account. “Yes, it would be better if I could get out what I want to say immediately, but if that keeps my stuttering going—by using forcing and avoidances, I best think about it and find a way to tolerate some discomfort.” The rational person no longer believes that “Only perfect speech is acceptable” (Table 6.1; irrational belief #AT#), but that “No one really has perfect speech. Some disfluencies are even found in the fluent speakers.”
Irrational beliefs evoked by negative activating events can lead to either healthy or unhealthy negative emotions and consequent behaviors (Ellis, 1994). Unhealthy negative emotions about an event a) lead to psychological pain; b) result in self-defeating behavior; c) block a person from pursuing one’s goals, and/or d) lead to dysfunctional cognitions.

On the other hand rational beliefs a) result in constructive cognition; b) help a person to pursue their goals; c) evoke self-actualizing behavior; and/or d) make a person aware that the chosen path to a goal is not producing the desired results and encourage him or her to search out another way to pursue the goal.

Dryden et al. (2003) list a number of unhealthy negative emotions and their counterpart healthy negative emotions. These include: a) anxiety versus concern; b) guilt versus remorse; c) shame versus disappointment; etc. For example, when a person stutters the healthy response is disappointment, instead of shame. “It certainly would have been better if I did not stutter as severely, but there is nothing to be ashamed about.” Another example is when the teenager is in the classroom, is asked to talk, and tells himself or herself that it would not be awful if they stuttered, but rather inconvenient. He or she would probably only feel concern instead of anxiety, and, hence, stutter less.

Three Basic Demands (Musts)

All persons construct their reality in highly idiosyncratic ways. Their beliefs, and self-talk is individualistic. Yet three demands seem to permeate all irrationalities.

Demands on self. In a person with CPSS the demands center around “I should be able to talk without stuttering or I am no good.” and “I have to be approved by
everybody, and to guarantee that, I need to talk perfectly”. These types of musts lead to the person feeling ashamed, anxious, guilty and even depressed, when they are not fluent.

Demands on others. Must can frequently be expressed as follows: “Others should understand how hard and unfortunate it is to be a stutterer and give me special privileges or else they should be damned” or, on the other hand “Everyone should understand that there is nothing emotionally wrong with me or else they should be damned!” In either case there is an inherent damning anger, sometimes violence against those who make fun of them, and passive-aggressive acting out.

Demands on the life condition. A stutterer will frequently, inside himself or herself, believe that “I should not stutter. And I should not have to do extensive formal or self-therapy to alter my brain. Both stuttering and therapy are too hard. The world is unfair to poor little me. I can’t stand stuttering. Therapy should be easier.” When beliefs like these pop up self-pity, addiction, procrastination, and lack of purposive behavior is often the result.

Round and round the ABCs go

Ellis (1985) noted that there is a complex psychological interaction among the A’s, B’s, and C’s. Some will be noted below.

Believing that one must be accepted. This may lead a person to anxiety about his or her speech and cause them to stutter more, thus creating a situation (an A) which is then interpreted as evidence that they will always stutter.

A feeling of shame. This type of C will cause a person to avoid situations where he or she believes they will stutter. Concurrently, the person may build up a belief that he or she will always stutter in this situation.
The act of stuttering. The actual experience of stuttering can strengthen the feelings of anxiety, guilt, and shame. It may also build up the belief that he or she is not a worthwhile person, because the stuttering may cause rejection by other people.

What All People Inherit

All people inherit the tendency to be forever fallible. All people are also subject to having practical problems, just because they live in an imperfect world. The three things that stutterers inherit are listed below.

Having practical problems in life. In the case of a stutterer, one of the practical problems is stuttering.

Tendency toward musts. Ellis (1984) states that even with the best upbringing people have a tendency to resort to escalating their desires into demands-absolute musts. The dissertator agrees with Ellis also that modern society encourages various forms of demands, shoulds, and musts.

Ability to challenge irrational thinking. On the other hand Ellis acknowledges that cognition, especially when focused by reading or interacting with rational people, can lead a person to solve their problems, in this case their tendency to stutter and be upset by it. People do have the inherited ability to identify irrational/unhelpful beliefs and do have the power to work on changing them.

Types of Emotional Disturbances

There are two types of emotional disturbances (cf Dryden, et al., 2003): a) ego disturbance and b) discomfort disturbance. Frequently these two disturbances interact.

Ego disturbance. Most people have a feeling of inferiority due to some real or imagined defect or past actions. The defect can be social status, physical imperfection, or
some character fault. Defective actions include acts committed, achievements not reached, a lack of skills, or the presence of disabilities such as stuttering. When a person places demands on himself or herself and then does not live up to his or her ideal, they tend to down themselves and to rate their whole being as worthless. Sometimes, the ego disturbance is displaced onto another person who presumably acts to devalue a person’s self-esteem. Thus, if somebody makes fun of a person’s stutter, the stutterer may feel anger toward the person, because his or her conditional self-esteem has been attacked.

*Discomfort disturbance.* Discomfort disturbance is based on a presumed need that the person has to be physically and mentally comfortable. It is also frequently associated with an unknown situation where the person imagines he or she will not be able to bear mental anguish or physical pain. For example, a person will not do his or her therapy homework because it might evoke psychological anguish.

*Solution.* Ego disturbance can be conquered when a person arrives at a state where, instead of seeking conditional self-esteem, he or she stops rating their total self, and rates only their characteristics, actions, skills, etc. Another way to look at the solution is to define ones worth as ones being alive and being able to enjoy at least something. In the REBT literature this is frequently called unconditional self-acceptance.

The discomfort anxiety solution is dependent on the person’s learning to tolerate mental and physical pain, as well as learning to have a higher tolerance when something is delayed or denied to them—when there is a frustration in getting immediately, or even permanently, something that the person wants. The solution is akin to the Tao’s saying “S*** happens.”
Summary of REBT process

As stated earlier, collaborative REBT is part teaching and directing the client to perform certain activities, and part letting the client become his or her own therapist. The therapy was not designed to be based solely on an interactional relating process between client and therapist. Of course, the client and the therapist interact and relates to each other. Of course they have to be compatible. The sensitivity and connection between the client and therapist can advance the process of therapy. However, the emphasis is on the client to do the work unlike Motivational Interviewing where the therapist has to convince the client to get better.

Homework based. Since the client sees the therapist for only 50 minutes and his or her group for one and a half hour every week (out of 168 hours), most change comes about through the work that the client does on his or her own outside the therapy setting. At the start, the therapist designs the homework assignments, but eventually the responsibility for the design of the homework will be shifted to the client.

Types of homework. The homework is multimodal in nature. The various exercises will be described in later sections. The homework is based on cognitive, emotive, behavioral and perception techniques.

Responsibility for homework. In the beginning, the therapist actively checks and probes the outcome of the homework. Later, the client will be encouraged to evaluate his or her homework and report on what has worked and what has not.

Concluding remarks

Change occurs when the client understands the following three insights:
What caused the stuttering problems? The stuttering has had some genetic and environmental components, but it was really firmed up by the client’s learned and internalized rigid thinking, disturbed feelings and inappropriate behaviors.

What is the most important aspect that propagates stuttering? When the client reindoctrinates himself or herself with irrational/unhelpful beliefs and continues his or her self-defeating habits, he or she ensures that the stuttering will continue.

What can be done to change the vicious cycle? The client needs to recognize and dispute his or her irrational beliefs. He or she also needs to break self-defeating behavioral habits. The actual steps to do this will be described in the following sections.

Homework assignments

The homework assignments during this phase consist of reading various REBT books and pamphlets. The client’s reading level and sophistication determine which material to read. The client is encouraged to ask questions and discuss what he or she has read. The objective of this assignment is to have the client understand more deeply how REBT works. Two books are especially recommended:

A Guide to Rational Living. The third edition of this book published in 1997 and written by Albert Ellis and Robert Harper is the most widely read REBT book. This book has sold almost 2,000,000 copies and remains the basic text read by REBT clients and therapists.

SOS Help for Emotions. The revised edition (second edition) published in 2008 and written by Lynn Clark is somewhat more accessible and effectively provides the basic elements of REBT using cartoons as well bolded summary statements. The dissertator believes this is a better introductory text.
Unconditional Self-Acceptance (USA) Step

Introduction

Each person is born with a different genetic make-up and undergoes different environmental influences. Yet all persons are alive, experience life, and are capable of enjoying being alive. Two pivotal goals of REBT are: 1) to accept oneself unconditionally and 2) to accept others unconditionally. This does not necessarily mean accepting a person’s characteristics or behaviors. Effort is made to change things like stuttering, being overweight, etc. The paragraphs below will describe what unconditional self-acceptance means and how to achieve it.

Basic Definitions and Differentiations

General semanticists and REBT. Korzybski (1933/1990) and Ellis (1999, 2000) in trying to clarify natural languages explained the difference between oneself and one's characteristics, deeds (past and future), and human potentialities. The person is not only his or her past deeds, his or her characteristics, but also his or her potentialities. The more superficial cultures also add to these basic elements the person’s status in the group, his or her accomplishments, looks, habits, and his or her possessions. Since the self is so complex, and the worth of the self is based on the perspective of the observer, the self cannot be rated in any meaningful way. REBT can see the value of rating the various aspects of the person, but is against rating the person’s totality—his or her self—because it is not really possible and it would not serve any value.

Alternative to rating. The only reasonable alternative to rating oneself is an unconditional acceptance of the self, while rating some characteristics of a person in order to determine whether these needs can be changed. For example, the person who
stutters can be taught to accept himself or herself unconditionally, yet rate (dislike) his or her stuttering as something undesirable and try to improve his or her speech fluency.

Interaction of USA and unconditional other acceptance (UOA). Ellis (1996, 1998, 2000) has observed that when clients learn to accept themselves unconditionally, they also tend to accept others unconditionally. This will lead to better social functioning and making more rational choices and experiencing a more satisfactory life with less emotional disturbance. On the other hand, the dissertator notes that sometimes it is easier for a stutterer to unconditionally accept others who stutter first, and only then fully accept himself or herself whether he or she stutters or not. In order to facilitate this, the NSA and other organizations have lists of famous people who stutter.

Difference between conditional self-esteem and unconditional self-acceptance. Most psychologists, except those employing REBT, often are not accurate in using the terms ‘self-esteem,’ ‘self acceptance,’ ‘conditional self-esteem,’ and ‘unconditional self-acceptance.’ Most psychologists try to raise self-esteem in their clients by pointing out to them that the clients have some valuable characteristics. What results is conditional self-esteem which is highly pernicious because the characteristic by which they rate themselves can easily disappear. For example, a person may rate himself or herself as “good” because they are a good student. However, they could get a brain injury or form some bad habits or attend a school where the competition is stiffer and then they would have to rate himself or herself as bad. Often a stutterer rates himself or herself as “good” when they are fluent (or more fluent than usual) and “bad” when he or she has a period of disfluency. The alternative is to not rate himself or herself at all, let alone rating himself or herself because they are fluent or not. The dissertator believes that this is one of the
main reasons why people who stutter relapse after “successful” therapy: every little
disfluency poses a danger to their self-concept, which leads to anxiety which, in turn,
results in less fluency and more disfluency.

*Philosophical and Historical Basis*

Many psychologists and thinkers in the past with a constructivist bent, such as
Korzybski (1933/1990), Tillich (1953), Adler (1964) and Rogers (1961), have advocated
that people can accept themselves unconditionally despite their shortcomings. REBT
holds that self-downing is especially pernicious and causes great psychic pain and mental
disturbance.

*Homework*

In order for a client to unconditionally accept himself or herself the client is
assigned one or more of the following homework exercises. This is the first time that the
client is given a choice to choose which homework they want to do first.

*Alternative to not rating himself or herself.* The elegant REBT answer is to
suggest to the client to not rate himself or herself at all. However, since some clients
automatically insist on rating themselves, a client is taught to rate himself or herself as
good just because he or she is alive, capable of enjoying himself or herself, and are
unique human beings. The client is assigned to repeat five times a day, “I am a good
human being whether I stutter or not. Fluency will not make me a better human being. It
will make me only a more fluent human being. Disfluency cannot make me a worse
human being; it will only make me a human being who sometimes stutters.”

*Acceptance is a choice.* In this homework exercise the client is asked to list all the
bad and good characteristics he or she has. Some are external, such as looks, age,
accomplishments, and possessions. Others are based on belief that a supernatural being, such as a specific god, accepts them. Still others are internal. These include character, emotional stability, optimism, etc. Then the client is asked if they understand that if they rate themselves using any, all, or some of these characteristics it is their choice as to which characteristics they choose. Then the client is asked to write an essay arguing that since they can choose which characteristics he or she rates himself or herself by he or she can also just choose to accept himself or herself, bypassing all the criteria listed.

**Rating acts, deeds, and skills.** Next the client is asked to list a sample of their acts, deeds, and skills and rate them as helpful, unhelpful or neutral in attaining one’s goals. For example, stuttering in a classroom would be rated as unhelpful (unless it is voluntary pseudo stuttering done as a desensitization exercise). Then the client is asked if any of these traits make him or her a better or a worse person. The answer which the therapist expects is that the client answers “neither”. If the client does global rating, the REBT arguments against global rating are revisited.

**Making a list of anti-rating slogans and reading them five times a day.** Ellis (1962, 1991, 2000) and Ellis and Harper (1997) suggest the following types of statements to solidify the anti-rating and unconditionally accepting oneself. Here are statements to modify their beliefs for those who stutter:

1) I am alive and can enjoy things whether I stutter or not;
2) I choose to keep on living and enjoying myself whether I stutter or not;
3) I do not need to rate myself depending on whether I stutter or not;
4) I would like to maximize my enjoyment whether I stutter or not;
5) Even though I may not be able to do some things right now because I stutter there are many things that I can do whether I stutter or not;
6) So even if I never become a fluent speaker, I can accept myself and not assign a rating based on whether I stutter or not, and how severely I stutter;
7) I do not have to disrespect myself, even if others laugh at my stuttering;
8) Etc.

The therapist should encourage the client to make his or her own list, restate the above as they see fit, or be as creative as they choose. The important thing is that the client really reads and carefully reflects about the statements and their meaning. The dissertator suggests the thorough thoughtful attendance to this list at least three to five times daily until he or she sincerely believes it.

Motivational Step

Introduction

In order to do enough work outside the clinic, the client needs to motivate himself or herself with the aid of the therapist to spend as much time as necessary to help himself or herself to modify his or her brain. All people are different; what motivates one person to extend effort and spend time in changing his or her beliefs and behaviors may not motivate another person.

Some Factors That Have Demotivated a Client From Pursuing a More Fluent Speech

Inadequate therapies and failure to conquer stuttering by oneself. This is not a place to review why certain therapies are inadequate; however, many adults who still stutter have certainly tried and failed at therapy. They have also tried various self-
therapies and come away without any great improvement. Many are clearly demoralized and skeptical of all therapies.

_Not allocating enough time and energy to speech/belief correction._ Most therapists and clients arrive at a therapy regimen that is not an immersion type of therapy. The dissertator hypothesizes that, at least on some days, the client has to do massive practice to modify his or her brain.

_Strongly held irrational beliefs._ Table 6.1 gives a sample of irrational beliefs that prevent any meaningful progress in therapy. As shown in the following sections, these beliefs will have to be disputed and challenged, in other words altered, for therapy to have any effect. This topic will be discussed in a later section.

_A Number of Homework Exercises_

The following exercises are recommended to be performed in the order given. However, there is latitude to choose and use these assignments out of sequence. Not all of the exercises may have to be employed. When the client’s motivation sags during the next steps, it is suggested that the client and the therapist revisit some of these exercises.

_Comparing of best speech when talking alone with the worst._ The client is instructed to consult the definition section for the definition of CPSS and for each item in the primary and secondary definition and write down the severity when talking alone—one column—and when talking in his or her most feared situation—another column. The severity scale is from 0 to 3: 0 = not at all; 1 = slight severity or rarely occurring; 2 = moderate severity or moderate in frequency; and 3 = strong severity and frequently occurring. Then the two column numbers are compared and the difference noted. In discussing the results the stutterer comes to realize, as does the therapist, that the client
knows how to talk. The biggest hurdle is the evaluative beliefs about a situation that
cause anxiety and, hence, stuttering. At this moment the client is also instructed to read
the previous chapter on how stuttering is developed and how it is perpetuated.

**Cost-benefit analysis.** Although it would seem obvious that the client knows all
the benefits of talking 30% more fluently, 60% more fluently and 90% more fluently, this
is not the case. One of the homework exercises is to write an list of how the client’s life
would change if he or she had 30%, 60%, and 90% improvement in their speech. Another
list to be written is in three parts describing how life would change if he or she felt 30%,
60%, and 90% less anxiety, guilt, and shame concerning his or her speech.

**Disputing helplessness and hopelessness while using voluntary pseudo stuttering.**
This is treatment setting exercise to demonstrate to the client that he or she can change
the severity of his or her speech with both the client and the therapist sitting in front of a
mirror and doing a voluntary pseudo stuttering on every word while having a
conversation and observing that nothing terrible, awful, or horrible happens when they
conduct the conversation in this manner. It demonstrates to both the client and the
therapist that the client can change his or her stuttering. Voluntary pseudo stuttering
consists of what Wendell Johnson (1961) called “Iowa bounce”. This is an e-easy re-re-
repetition pa-pattern o-o-of sp-speaking. The objective is to show that the client can
change how he or she stutters. After carrying on a conversation like this for a half an
hour, the therapist can emphasize that the client can alter his or her speech, and with
proper exercises and challenges to his or her self-talk, can learn to drastically reduce the
severity of his or her stuttering. He or she is then sent home to practice voluntary pseudo
stuttering in front of the mirror 10 minutes every morning and 5 minutes every evening.
Metronome talk. Instead of using voluntary pseudo stuttering, the client and the therapist talk to the rhythm of the metronome. This is another way to demonstrate that the way a client speaks is not crystallized. The client may also be allowed to move his or her hand along with the metronome. The client is assured that the only purpose of this exercise is to convince him or her that he or she can change the way they talk and, with proper sequencing of homework exercises, to change his or her self-talk. This, along with proper speech techniques, teaches the client how to talk normally though imperfectly—sometimes falling back into low level severity and frequency of stuttering until finally it all dies out.

Envisioning the therapy process. The client is asked to write a list of the methods he or she uses to become less anxious, ashamed, and guilty about his or her speech and methods that lead to less severe and frequent disfluencies. The therapist best believe that this is possible. It is here that the client is instructed to write about his or her beliefs that would bring about this change.

The client is encouraged to join an REBT list server group on-line. The dissertator has established such a group on Yahoo Groups: Stutter_Less_With_REBT.

Concluding Comments

The client will progress faster and be more motivated if he or she is given more responsibility for selecting, completing, and discussing his or her homework. The therapist should be inspirational and able to point out a number of persons that, for all practical purposes, lead a normal life even though they have a slight stutter. NSA and SFA provide a number of examples on their websites. The therapist should be ecumenical and willing to point out other people who have overcome their stuttering using a variety
of methods. If the client gets a sense that stuttering is not a terminal condition but can be changed, he or she will work harder.

The therapist should, of course, explain that therapy will not be a linear process, rather, the client may have daily, and even minute to minute, changes all the time trending toward success. Some affirmations that may be useful to include, “It is not how many times one falls down that counts, but how many times he or she gets up”; “Tough times don’t last, tough people do”; “Some days getting up putting one foot on the floor and then the other one, is all you can expect”; and any other inspirational statements that the client can find on the internet.

The dissertator discourages anyone using fear as a motivator. However, in order to overcome lackadaisical and lackluster performance marked by procrastination and lack of commitment, the therapist should have the client and the therapist fill out a commitment form of spending at least three hours a day, one day a week, intensively devoted to stuttering therapy and practice. To most therapists this will appear to be extreme demand; extreme problems call for extreme measures. The therapist best remember that CPSS, shares characteristics of the Cluster C Personality Disorder spectrum. These problems are very hard to overcome.

As an alternative, the client might also be well served if the therapist, over a period of time, works at creating space in their schedule. Problem solving resistances to adding this to their usually over-worked and over-committed schedules may be the only way to allocate enough time for the change process. However, the dissertator believes that if the client does not have enough time—and enough extended time—to biochemically alter their brain to overcome a deeply seated habit, it really will be a waste
of time and money, especially to the client. In trying to get the client ready for serious therapy, reading an REBT book on procrastination is also encouraged. Above all, the therapist should supply copious amounts of meaningful praise and compliments and be willing to receive both positive and negative feedback—discussing what went right and what went wrong during each session. The rule of five positive feedbacks—praises and compliments—to one negative feedback tends to work magic for the relationship. But the therapist needs to be extremely clever.

Identification Step

Introduction

There is a great deal of variation in what each individual stutterer with CPSS thinks—his or her beliefs or self-talk—and how each individual stutterer talks—his or her primary and secondary symptoms. Once a stutterer can face his or her stuttering, it is advantageous to find out the salient idiosyncratic aspects of his or her stuttering and beliefs about it.

Irrational Beliefs that Propagate Stuttering

Introduction. Table 6.1 gives the main irrational or unhelpful beliefs about stuttering and stuttering therapy. Most stutterers are aware of what they believe. But some of the beliefs are preconscious and must be brought to full consciousness by detective work on behalf of both the therapist and the client. This can be done by tracing back from an unhealthy negative feeling which was evoked by thinking about some aspect of stuttering or which arose from a stuttering behavior. Sometimes casual conversation will bring up a phrase or an attitude that can be associated with an irrational belief about stuttering.
Homework assignment. The client is instructed to use Table 6.1 and designate each of the irrational feelings with a number from 0 to 3. The meaning of each of the numbers is as follows: 0 = not at all; 1 = slight severity or rarely occurring; 2 = moderate severity or moderate in frequency; and 3 = strong severity and frequently occurring.

Stuttering Behaviors

Clinical work. Feedback on stuttering behaviors is obtained by talking in front of a mirror with the client and the therapist sitting side by side and observing how the client talks. If the client is already at ease in the clinical setting, the client is asked to approximate his or her behaviors in his or her most difficult situation. Fortunately, talking on the phone is one of the CPSS client’s nightmares. Thus, phone calls can be made in front of the mirror in the clinical setting. Otherwise the client and the therapist may need to venture outside of the treatment setting.

Homework assignments. Chapter IV lists all the primary stuttering symptoms which can be used as a checklist. The client is asked to rate himself or herself again on a scale from 0 to 3 as above. Then the same exercise can be performed on secondary behaviors, avoidance behaviors, and life choices.

Disputation of Irrational Beliefs Step

Basic Model

In an earlier section of this chapter the A x B => C model was described. The next step is to show how the irrational/unhelpful ideas can be changed to rational/helpful ideas. This is done by adding two more letters to the above formula: A x iB => uC + D => E. Note that in the original formula B has been changed to iB, where the “i” denotes an irrational Belief and the “u” denotes an unhealthy Consequent Emotion. In the
extended formula D stands for *disputation or challenging* of the irrational Belief about the activating event; and E stands for effective new emotion that is a healthy negative emotion and also an effective new behavior. The “+” is defined as “adding” or “doing” and the second “=>” is still defined as “leads to” or “results in”.

*Explanation of Disputation or Challenging*

The disputation or challenging consists of asking questions about the irrational idea: the questions are based on HELP, where H stands for assuming a partially H-humorous relaxed, distancing attitude about the situation A, E questions the E-mpirical evidence backing the iB, L evokes L-ogic of the iB, and P designates P-ragmatic questions.

*Conversational Example of Therapist Teaching the Client the Disputation Technique*

What follows is an introduction to disputing or challenging of irrational/unhelpful beliefs. Here the therapist is trying to talk the client into doing voluntary pseudo stuttering so as to desensitize the client toward stuttering and modify his or her brain to understand that nothing awful, terrible, or horrible happens when a person stutters.

**Therapist:** One of the homework exercises I want you to do is voluntary pseudo stuttering. This means that you insert an easy repetition, called Iowa bounce, in your conversation on words that you do not expect to stutter on.

**Client:** - - - Wha-wha-what is the pu-purpose of this e-e-e-e-exercise?

**Therapist:** The objective of this exercise is to modify your synapses in your brain in such a way as to not react with panic or fear when you hear yourself stuttering. Let me de-de-demonstrate how this i-i-is done. Can you do it for me?

**Client:** Gunars, you told me-me-me-me - - that in - a collaborative the-the-the-therapy, if I - - - ha-ha-ha-have reservations o-or ob-ob-objections - - - a-a-a-a-about anything y-y-y-you ask me-me - - - to do I-I-I should - - - - tell the-the-the-them to you.
Therapist: That is right. Do you have any objections to doing this?

Client: - - Y-Y-Y-Yes. I-I-I - - really do not - - - see a-a-any sense in - - - - do-do-do-do-do-doing this. I st-st-stutter - all the ti-ti-ti-ti-time - - - - as it - - - - is, s-s-so why should I-I-I - - - stutter - - - - - more - - o-o-on pu-pu-purpose. I - - am sure - - - - th-th-th-th-th-that some of th-th-th-the - - - - pseudo - - stuttering w-would turn out - - - - into re-re-re-real stuttering. - - - - I stutter e-enough - - - - as it is. I-I-I really - - - fe-fe-fe-fe-fe-fe-feel anxious even th-th-thinking - about this. I don’t - - - think - - I ca-ca-ca-can do it.

Therapist: Let us step back for a while. We have been talking about REBT, Joe. This would be a good time to demonstrate how REBT disputation really works. Are you willing to do this?

Client: - - - - - That s-s-s-s-s-sounds – be-be-better. - - - - Yes, - - - I - - really did n-n-not - - - understand all that “- - - A-A-A-A-A times B causes C” stu-stu-stu-stu-stuff. - - - - Let - - alone the - - - - disputation - - - o-o-o-o-o-or challenging.

Therapist: Let me set the background. I, as your therapist have asked you to do some voluntary pseudo stuttering homework. Specifically, we have decided that you would go to Starbuck’s and ask for a small Coffee Americana. Ahead of time we would decide that you would say, “One small coffee Americana, please.” You usually do not stutter on Americana, so we have decided that this time you would day “A-a-americana”. Can you tell me what the A is?

Client: - - - The - - A is m-m-m-my - - - - approaching a Starbuck’s sales - - per-per-per-person - - - - and ask him o-or - - - her for a - - - - cup o-o-o-o-o-of coffee w-while doing - - - voluntary pseudo - stuttering.

Therapist: Now we jump to C your emotions that you feel. What are your feelings at C as you approach the sales person?

Client: - - - I-I-I-I feel - - - - anxious and afraid th-th-th-th-th-that - - - - I would b-b-b-be - - - - looked upon a-a-a-as some - - kind - - - - of me-me-me-me-mental case.

Therapist: So in a word or two what is your Cs, your emotions?

Client: I would - - - say a-a-a-a-anxiety.
Therapist: Does A cause C?

Client: Y-Y-Yes.

Therapist: Are you sure? Wasn’t there a B involved?

Client: - - Oh, yes. A - - - ti-ti-ti-times B causes C-C-C-C.

Therapist: So starting with C can we infer what type of beliefs would you have to become anxious?

Client: - It - - w-w-would be - awful i-i-if I stuttered. - - - - 1 - - - - ca-ca-ca-can’t stand stu-stuttering whether - - - it i-i-is - - pseudo stuttering o-or real stuttering. - - - The salesperson – w-would think me a - - me-me-mental ca-ca-ca-case and - - - that would ma-ma-ma-make - - - - me feel like a-a-a-a piece - - of cra-cra-cra-crap, worthless.

Therapist: (standing up and writing on a white board) I see you have been reading REBT books and have a good grasp on the Bs. (while writing) iB1 is “It would be awful if I stuttered.” iB2 is “I can’t stand stuttering whether it is pseudo stuttering or real stuttering.” The last sentence I would break up into two separate parts iB3 “The salesperson would think me a mental case.” And iB4 “That [the salesperson’s judgment] of me would make me feel like a piece of crap, worthless.” Which of the irrational/unhelpful ideas would you like to dispute first? I suggest iB2.

Client: OK.

Therapist: Do you remember the HELP acronym and what it stands for?

Client: - - - - N-N-N-No.

Therapist: Let me write it down on the white board. (writing)

Client: - - OK.

Therapist: (while writing) HELP, where H stands for assuming a somewhat H-humorous relaxed, distancing attitude about the situation at A, E questions the E-mpirical evidence backing the iB, L evokes L-ogic of the iB, and P designates P-ragmatic questions.
Let me be more specific and take one letter at a time:

**Humorous** dispute example: “Will the fate of western civilization depend on what happens in this situation? Will it even matter to you ten years from now?”

Client: - (smiling) Of co-co-co-course not.

**Empirical** dispute example: “Where is the evidence that you can’t stand stuttering? Will you really die if you do a pseudo stutter?”

Client: (smiling) N-No, I-I-I-I-I wi-wi-wi-wi-wi-will - - - not die, b-b-b-but I - - do-do-do-do-don’t - - - like - - - it.

Therapist: You are a good straight man for me, Joe. **Logical** dispute example: “Is it logical to conclude that the things that you do not like you cannot stand?”

Client: - - - No.

**Pragmatic** dispute example: “Is it advantageous for me to do the voluntary pseudo stuttering to desensitize myself and biochemically modify my brain?”

Client: Probably, - - - yes.

Therapist: I would say, definitely yes. Do you agree.

Client: - - - (reluctantly) Yes, it w-w-w-w-w-would help me t-to ge-ge-get over my anxiety about stu-stu-stu-stuttering.

Therapist: Joe, could you reread the questions and restate your B2 to be more rational/helpful.

Client: - - - Do I - - - ha-ha-ha-have - - - - to d-d-d-do i-i-i-it - - - - out loud.

Therapist: Not necessarily.

Client: - - - - - (after revisiting the questions and his answers) Even tho-tho-tho-though I-I don’t - - - - like practicing vol-vol-vol-vol-voluntary pseudo stuttering, - - - - there - - - - i-i-i-is no - - - -lo- logical reason not - - - - to do - - - - i-i-i-i-it. I can - - - stand i-i-i-i-i-it. And it – w-w-w-w-w-would probably help me – wi-wi-wi-wi-wi-with my therapy. (smiling) And I - - su-su-surely w-will not - - - die of it.
Therapist: Remember Lynn Clark’s “I don’t like it that’s OK, I can stand it anyway.” Your new belief is called rB2, rational/helpful belief #2. How do you feel now?

Client: I - - - fe-fe-fe-feel determined to go ahead - - a-a-a-a-and do m-my assignment. - - - - B-B-B-But I - - - am st-still - - anxious.

Therapist: Let us take another of your irrational ideas and dispute it. For example iB1: Do you really have evidence that stuttering is awful?

Client: No.

Therapist: That it is more than 100% bad, so bad that stuttering absolutely should not exist?


Therapist: And should it exist?

Client: - - - - I guess - - - y-y-y-y-yes.

Therapist: Why?

Client: Because - - it e-e-e-exists.

Therapist: And whatever exists, exists. Neither you nor I can command the anxiety to go away, right away. But can we make it less severe?

Client: -Yep.

Therapist: How?

Client: (laughing) By - - d-d-doing a-a-a-a-all your - - silly ho-ho-ho-ho-ho-homework assignments.

Therapist: And how is your anxiety?

Client: - - - - - Somewhat less.
Therapist: As you can see we don’t need to always use every one of the HELP dimensions in disputing and challenging our irrational beliefs. Can you come up with a challenge or dispute for iB3.

Client: (after reading the whiteboard) Using Empirical challenge I could ask myself, “Where is the evidence that the sales person would think me a mental case?”

Therapist: And...

Client: The-There is no evidence.

Therapist: But suppose he or she would think you a mental case, would that make you feel like a piece of crap?

Client: Not necessarily, unless I myself bought into it.

Therapist: You are right. Now how do you feel?

Client: I still feel that doing pseudo stuttering would be hard to do.

Therapist: Suppose it is hard, but is it too hard?

Client: No.

Therapist: And as Ben Franklin said, “No pain, no gain.” Therapy is tough, but you are tougher.

Client: (pause)

Therapist: Do you think you understand the process of disputing?

Client: I think so.

Therapist: There is an REBT Self-Help Form which my friend has put on a website. I have an example of how it came out when filled out and processed. The self-help form internet address is http://www.rebtnetwork.org/library/shf.html
Client: - - Thank you (taking the form).

Therapist: What homework will you assign to yourself for the next session?

Client: - - Filling o-o-o-o-out one - - of th-the internet REBT - - - - - Self-He-He-Help Forms.

Therapist: That is a good idea.

*Example of an REBT Self-Help Form*

There are a number of generic REBT self help forms that are available in books as well as on the internet. A generic REBT Self-Help Form can be found at the following website http://www.rebtnetwork.org/library/shf.html. This form without the instructions, available as drop down menus on the internet, is included as Figure 7.2.

*Processed REBT self-help form.* A filled in and processed REBT Self-Help Form is included as Figure 7.3. The client can be walked through this form to show him or her how disputing takes place.

*Discussion and Conclusions about Disputation of Irrational Beliefs*

*General objective.* The objective of disputing an irrational belief is to change a belief that is irrational/unhelpful to one that is rational/helpful. Neither the therapist nor the client has to become an expert disputer or challenger.

*Inelegant solutions work.* The HELP algorithm, designed by the dissertator based on various REBT sources, discussed above, appears to be the most complete and elegant one available, frequently asking one, two, or all three simple questions: 1) “Where is the evidence?” 2) “Does it help me to think this way?” and/or 3) “Does it logically follow that I need what I want?” Some people find it even more expeditious just to replace the
<table>
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<tr>
<th>Step 1: Describe the Activating Event</th>
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<td>What is the situation that you are upset about?</td>
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<th>Step 2: Identify Your Unhealthy Negative Emotions &amp; Your Self-defeating Behavior</th>
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<tr>
<td>What are the unhealthy negative emotions that you are experiencing?</td>
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<td>What self-defeating behaviors would you like to change?</td>
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<th>Step 3: Identify Your Irrational Beliefs</th>
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<td>What are your irrational beliefs about the situation?</td>
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<td>Demands</td>
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<td>Awfulizing</td>
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<th>Step 4: Dispute Your Irrational Beliefs</th>
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<tr>
<td>What are your disputing questions?</td>
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<th>Step 5: Identify Your Rational Beliefs</th>
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<td>What are your rational beliefs about the situation?</td>
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<th>Step 6: Identify Your Healthy Negative Emotions &amp; Your Self-helping Behavior</th>
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<td>What are your new healthy negative emotions?</td>
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<td>What are your new self-helping behaviors?</td>
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<th>Step 7: Process Your REBT Self-Help Form</th>
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*Figure 7.2 REBT Self-Help Form.*
What is the situation that you are upset about?
Answer: Gunars gave me a homework assignment to do voluntary pseudo stuttering while talking to my friend, Thomas.

What are the unhealthy negative emotions that you are experiencing?
Answer: Anxiety, embarrassment

What self-defeating behaviors would you like to change?
Answer: Procrastination

What demand are you making about the situation?
Answer: I should not have to do this assignment.
Dispute: Why should I not have to do assignments to change how I speak?
Rational Belief: Even though I do not like these assignments, in order to change my stuttering I may well have to carry them out.

In what way are you awfulizing about the situation?
Answer: It would be awful if my friend laughed at me, since I usually do not stutter around him.
Dispute: Would it really be awful? Could I not explain to him why I am doing this?
Rational Belief: Even though it is inconvenient, it cannot be awful.

What are you saying to yourself about the situation that indicates low frustration tolerance?
Answer: I can't stand the tension of doing these assignments.
Dispute: Where is the evidence that I can't stand these assignments?
Rational Belief: There is no evidence at all that I cannot carry out these assignments.

What beliefs show that you are rating people instead of rating their actions?
Answer: I am a fool for stuttering.
Dispute: How does stuttering make me a fool?
Rational Belief: Stuttering does not make me a fool, I only sometimes foolishly tell myself that stuttering makes me a fool.

In what way are you thinking absolutistically about the situation?
Answer: I will never be able to carry out these assignments.
Dispute: Where is the evidence that I cannot carry out these assignments? Would it not help me in the long run?
Rational Belief: There is no evidence that I cannot ever carry out these assignments. And it would help me in the long run.

What are your new healthy negative emotions?
Answer: Concern and resignation.

What are your new self-helping behaviors?
Answer: I went out and did a voluntary pseudo stuttering exercise.

Figure 7.3 Processed REBT Self-Help Form
irrational/unhelpful ideas with the mirror image rational/helpful idea. For example, the irrational/unhelpful idea “I need to stop stuttering” can be replaced by “I prefer to stop stuttering, but even if I do not stop stuttering, I really don’t need to stop stuttering to live a full and enjoyable life.”

*Categories of irrational/unhelpful ideas.* There are five main categories of irrational/unhelpful beliefs or self-talk that best be disputed and changed. These are: 1) demands; 2) awfulizing; 3) low frustration tolerance; 4) people rating; and 5) absolutistic thinking.

*Mastering the disputation techniques.* The client is encouraged to read REBT books to master disputation techniques as well as fill out numerous REBT Self-Help Forms and discuss the disputation with the therapist.

*Homework.* Ultimately the client has to revisit the identified irrational/unhelpful ideas that were noted during the Identification Step and dispute all of them until he or she no longer holds them. It is suggested that the client fill out a REBT Self-Help Form for each of these ideas.

*Overcoming the Dire Need to be Approved Step*

*Introduction*

The next step in therapy deals with overcoming the dire need for approval. The reason that this is so important is that when the desire to be approved is escalated to an absolute need, it is hard to develop a thick enough skin to do meaningful stuttering therapy and overcome the anxiety which causes people to stutter.
Background

As social animals all people want to be accepted. This is probably a species-wide, inherited trait because at an earlier stage in the evolution of the species, it was necessary that humans be accepted by the “pack”. Otherwise, the individual was left behind or expelled and probably perished. But times have changed and an adult no longer has an absolute need for approval or love from any specific person, let alone from all significant persons in order to exist, although approval, acceptance and love do have some practical advantages.

The Pervasiveness of Perceived Need

This perceived need for approval, love, or at least acceptance is so pervasive that Ellis and Harper (1997) named this need to be loved and approved by all of significant people as their Irrational Belief #1. The person with CPSS often extends this beyond the significant persons in their lives to each and every person he or she meets. This may not be an individual choice but a strong inherited tendency that predisposes the individual to establish stuttering behavior and propagate it throughout his or her lifetime. The perceived need may also be more dire than for the rest of the population.

All is not Lost

Although the dire need for acceptance, approval, and love may indeed be an inherited trait, the environment has been such so that the genes responsible for this have been strengthened (e.g. this tendency has been reinforced as a reaction to the environment). Assuming that this dire need for approval causes social anxiety, which in turn causes and reinforces stuttering in the presence of all or a subset of people, all is not lost. According to REBT “biology is not destiny.” This dire need for approval above does
not have to condemn a person to a lifetime of severe stuttering, because humans have the capability to reflect, to a considerable degree, consciously what is stored in their synapses as an irrational belief, develop an alternate more rational or helpful belief, and proceed, through intensive, systematic methods to biochemically modify their brains.

_Systematic Approach to Change the Synapses That Cry Out for Dire Need of Approval and Love_

Since changing this dire need for approval is one of the cornerstones of managing and overcoming stuttering, it is important to have a systematic, easy to follow sequence of homework exercises coupled with clinical work to accomplish this. On the other hand, since all people with CPSS are individuals with different strengths and weaknesses, the sequence and emphasis of the following exercises can be altered. There is one caveat: if a client totally refuses to do one of the homework exercises, it only shows that he or she has some extremely strong irrational belief that is the cornerstone to his or her beliefs that will propagate stuttering throughout his or her lifetime if not challenged and acted against. Thus, eventually all the homework exercises have to be done at least a few times.

_Replacing an irrational idea with a more rational one._ By this time the client should have gotten to chapter 10 in Ellis and Harper’s (1997) “Guide to rational living”. The client is assigned to read chapter 10, entitled “Tackling your dire need for approval.” The client is then asked to come up with a couple of summary statements that replace the irrational idea with a rational one, which can then be discussed with the client. The gist of the essay best include: a) even though there are practical reasons for approval and love, neither the client (nor anyone else) needs it; b) the client can live a better life without always trying to please everyone; c) it is better to love than be loved; and d) there are too
many disadvantages of direly needing others’ approval and love. Above all it is best not to confuse one’s worth with approval from others.

*Anti-shame exercises.* It is all well and good to have an intellectual understanding of what might be more rational. However, if the perceptive brain does not experience the empirical evidence that nothing awful happens if one is not approved or constantly loved, it is only an intellectual feeling- intellectualizing. What is needed is some form of *in vivo* exercises involving other people that risk rejection and even elicit it. Ellis came up with the answer of how to do this; how to modify one’s synapses. These are the notorious anti-shame exercises. The client is asked to do some things that would cause other people’s approbation, even disapproval. The REBT literature is full of specific anti-shame exercises. These include, but are not limited to: a) going on a bus and calling out the next stop in a loud voice and remaining on the bus; b) on purpose “forgetting” to bring money or a credit card to a grocery store and after having the items checked out “finding out that one has forgotten” the means for paying; c) asserting oneself in a restaurant and elsewhere if the service has not been good and pointing out that you are not leaving a tip; d) if a woman, not wearing lipstick or rouge; e) if a man, wearing some lipstick or rouge; d) dressing inappropriately for some social occasion; etc. However, exercises that would invoke serious penalties, such as dressing inappropriately in a job environment, are contraindicated. Nor does one want to get fired or do things in public that would get one arrested. On the other hand, some inconveniencing of other persons sometimes may be necessary.

*Practicing assertiveness.* The therapist may ask the client for areas where the client has been unassertive. Is the client really doing something or not doing something
because they want to or is he or she just doing it to please people? The client is then assigned the homework to be more assertive in going after what they really want, even if it involves some social risks.

_Have the client try something new at which they might fail._ Convince the client that they should not desperately try to not make mistakes. It is all right to try and fail, to make mistakes, and even to be laughed at. As long as the client is learning from mistakes, that is all that matters. Collaboratively find some new activities that the client might enjoy, but initially fail at.

**Concluding Remarks**

The therapist and the client have to collaborate in understanding that without overcoming the dire need to be approved, accepted, and loved by everyone the following therapy exercises will be very difficult, if not impossible, and the results will be less than stellar. The therapist especially has to overcome his or her fear of disapproval and be able to show the client that he or she can go out in public and do some anti-shame exercises. A good therapist never asks the client to do something he or she is unable to do himself or herself. If the therapist cannot do it himself or herself, then it is time to discover what irrational beliefs does he or she hold? The dissertator believes it is Irrational Idea #1: “the idea that you must have love or approval from all the significant people in your life.” And maybe even fear the disapproval of insignificant people in one’s life.

_Advertising and Voluntary Pseudo Stuttering Step_

**Introduction**

Joseph Sheehan (1970) wrote that stuttering is what people do when they are trying to avoid stuttering. He was a vocal advocate of voluntary stuttering, which is more
accurately described as voluntary pseudo stuttering—because it is not real stuttering. Bennett (2006) advocates advertising, the act of either verbally or nonverbally letting the listener know that the speaker is a stutterer. Both of these methods are effective because they are methods of lowering anxiety by facing stuttering and, finding out that nothing awful, terrible or horrible happens when one stutters. Through massive repetition, the brain is altered and the prospect of stuttering no longer evokes ego or discomfort anxiety.

*Voluntary Pseudo Stuttering Technique Using Iowa Bounce*

*Description of technique.* Johnson (1961) defined Iowa bounce as an e-e-easy re-repetition pa-pattern o-of sp-speaking. When used as voluntary pseudo stuttering, the frequency and length can be varied. It is important, though, that it be only used on words that the speaker does not expect to stutter on. The therapist demonstrates to the client, in a clinical setting, what he or she means and informs the client that he or she will have to do this both in the clinical setting and then outside in the real world.

*Preparation.* Both the therapist and the client will almost certainly experience strong emotions against doing this exercise. The therapist, in the presence of the client, fills out an REBT Self-Help form about his or her irrationalities about doing this exercise. This is usually done on a computer where it can be automatically processed and then printed out. Next the client is asked how he or she feels in anticipation of doing this exercise. The anticipated feelings of ego anxiety, discomfort anxiety, and shame are examined via the REBT ABCDE format described above. This can be done in a conversational style first, followed by filling out an REBT Self-Help form or have the client fill out an REBT Self Help Form and then discuss it with the therapist.
Once the client understands the rational belief that, even though it may evoke feelings of anxiety and shame, these feelings can be tolerated by the client—“I don’t like it that’s OK, I can stand it anyway”—Clark (2002, p. 77) he or she is prepared to do the homework.

**Homework.** Then the therapist again demonstrates the technique in a clinical setting. The client is asked to practice this voluntary pseudo stuttering talking to the therapist in the clinical setting. In fact, a whole session may be devoted to practicing one voluntary pseudo stutter in every sentence both by the therapist and the client. This demonstration is then followed up by the therapist demonstrating it again in a real world setting. The client is encouraged to do this at least in 4 or 5 conversations outside the clinic while the therapist is within a visual or hearing distance. The client’s homework is then to use it more and more in outside conversations until the client uses it at least once in every conversation. The client is asked to write a paragraph or two about his or her experience using the technique. If necessary, the irrational beliefs evoked by this exercise are disputed by the client and the therapist.

**Expected outcome.** The therapist has to be prepared for a client who devoutly believes: “I just can’t do the voluntary pseudo stuttering. This exercise is too hard.” These irrational beliefs have to be squarely addressed until the client acknowledges: “Even though I don’t like to voluntarily stutter, I can do it” and “Although it is hard, it is not too hard.”

If the client religiously does his or her homework, the hypothesized outcome is that the severity and the frequency of blocks should be drastically reduced. But both voluntary pseudo stuttering and the disputation of irrational ideas behind the anxiety and
shame have to be included for the homework to be meaningful. The client also has to be reminded that if he or she fails at doing the homework, he or she should not come down hard on himself or herself nor feel any guilt. After all, all people are Forever Fallible Human Beings who first fail, but with persistence succeed. And occasionally everyone slips again, but should be ready to get up and try again.

Advertising

The objective of advertising is to prove to one’s brain, to modify it, to understand that there is nothing awful about stuttering *per se* and there is nothing awful about being known as a person who stutters. The goal is to eventually let everyone know that you stutter occasionally and get the reaction “ho-hum, I have always known about it” or “yeah, I know some other persons who stutter and they have not been handicapped by it at all” or actually educate your listener that other people who have stuttered like Sir Charles Branson, Jack Welch, and John Updike have all stuttered and been quite successful.

*Some ways to advertise.* There are many ways to advertise. The easiest is to say “sometimes I stutter” even when it is obvious to the listener that you stutter. Another way, of course is the pseudo stuttering discussed above. One can get a T-shirt made that refers to stuttering. The dissertator wore one that had printed on it “Mel Tillis also st-st-stutters.”

*Preparation for advertising homework.* Before assigning homework that advertises stuttering, it is important to talk about how the client feels about having to advertise stuttering. With a little probing, the therapist can discover whether or not the client is horrified about the thought of even doing advertising. If the stutterer sees no
value in it, he or she has to be convinced that it is a prerequisite to overcoming stuttering or even managing it. Joe Biden can serve as a good example here, although he no longer stutters severely, he talks about his stuttering. He even attended an annual NSA meeting as a keynote speaker and talked about his stuttering. Next the “can’t-stand-it” attitude--“I just can’t stand to do this homework exercise”--has to be disputed using REBT techniques. Then the feelings of anxiety and shame about the exercise have to be traced back to the irrational ideas that are behind these feelings. These, as well as the guilt-inducing beliefs about not doing homework, have to be challenged. The client needs to understand that doing homework is hard work, and that while the homework does not have to be done perfectly, the hurdles to doing it at all have to be overcome.

_A given sequence of advertising homework._ The underlying principle, as with all homework, is modeling by the therapist along with a contract between the client and the therapist describing how the homework will be carried out. Work in the clinical setting only desensitizes the client to stuttering in a clinical setting. The exception is the disputing of irrational ideas about stuttering, which may require an access to a white board or a computer. What follows is a possible sequence of advertising:

1) The therapist gets a number of NSA buttons and wears one together with the client in a public setting. Both the client and the therapist wear these buttons in public.

2) Then the therapist and the client encounter other people and start a conversation about stuttering. One of the best ways is to take a clipboard and ask a survey question or two about stuttering: “Do you know any people who stutter?” “What do you think causes stuttering?” If the client and therapist want to really enhance the exercise, they will add in one voluntary pseudo stutter each.
3) Ask the client to make a T-shirt that mentions stuttering and wear it to the clinical setting on the days that he or she attends therapy.

4) Ask the client to talk to their friends and family about the fact that they are in therapy.

5) When talking to a stranger have the client mention “Sometimes I just stutter”.

6) Have the client hand out pamphlets about stuttering. These can be obtained from SFA and NSA.

7) Ask the client to leave materials about stuttering in visible areas at his or her work (if appropriate).

8) Ask the client to order a poster of the famous people who stutter from SFA and post it in a visible place.

9) On Facebook or others appropriate networking websites, have the client mention that he or she sometimes stutters.

In all of these activities, the therapist works with the client using scaffolding (Vygotsky, 2002). The ultimate goal is to advise everyone the client knows that he or she has occasional disfluencies. After this goal has been reached, the client can use advertising two or three times a day, especially with people whom they have just met.

Concluding Remarks

One cannot underestimate the desensitization necessary to manage and overcome stuttering. The client needs to alter his or her brain and to create a mindset that there is nothing essentially, intrinsically wrong with an occasional disfluency before he or she can make permanent improvement and minimize the possibility of relapse.
Building a Fluency Base Step

Background

Wendell Johnson (1961) wrote that one of the easiest ways to expand spontaneous fluency is to find situations—such as when you are alone or talking to your dog—and then talk, talk, talk. Modern neuropsychology appears to support this view in that the client’s neurons that are used to form spontaneous speech are firing together often and, hence, these paths are reinforced.

The objectives in building a fluency base are twofold. The first objective is to alter the brain and strengthen the neuronal firing path of spontaneous speech. The second objective is to help the client gain the perspective that he or she can talk with spontaneous fluency and, hence, is both a fluent, as well as an occasionally disfluent, speaker. As more and more situations fall into the category where the client is a fluent speaker, he or she is advised to build a fluency base in these as well.

Homework

The therapist asks the client how fluent he or she is when talking alone and if he or she is satisfied with this level of fluency. The therapist should not insist on perfect fluency, but be satisfied with what the client himself or herself evaluates as fluent. Most clients report that they are either fluent or their level of disfluency is satisfactory. In many cases the therapist may have to fight against the client’s perfectionism and tell him or her to be more observant of normal speakers as they also have their disfluencies.

The client is advised to practice three or four times a day talking to himself or herself. When the client comes back the next week, the therapist and the client discuss both the physical production of speech and the emotional outcome of talking to himself
or herself. The client is encouraged to keep building the fluency base throughout the therapy process.

**Expected Outcome**

One of the expected outcomes is that the client’s self-talk or beliefs change. He or she no longer considers himself or herself a stutterer but a person who sometimes is fluent and sometimes has some disfluencies. The client also learns how to do homework, how to assign himself or herself homework, and how to debrief his or her homework.

**Rational-Emotive Imagery (REI) and Its Applications Step**

**Rational-Emotive Imagery**

Ellis (2000) describes his method of REI as an emotive way of changing unhealthy negative emotions (C1) to healthy negative emotions (C2). This method can be used in order to change feelings. The dissertator hypothesizes that this method is also effective for diminishing PTSD symptoms that result from having a few or continued traumatic experiences due to stuttering. Some of these experiences, although very unpleasant, such as extreme bullying due to stuttering, would not have been experienced as traumatic except for the belief about the situation and the continuous re-experiencing of these events.

**Description of technique.** The steps include:

1. The client should imagine a really bad future, current, or past situation, such as being bullied about his or her stuttering or having to talk under extreme time pressure and knowing that he or she will not be able to talk effectively. Using detailed environmental cues imagine this Adversity (A) occurring and resulting in dire consequences.
2. Letting oneself be totally immersed in the unhelpful, inappropriate negative feelings about this Adversity (A). If done properly, this results in a strong dysfunctional, negative feeling -- that unchecked -- corrode the happiness and ability to function effectively and efficiently. At this time the client should not tell himself or herself anything, just feel.

3. Once the unhealthy negative feeling is firmly established, the client should hold this feeling for at least one or two minutes. Next the client is directed to change this unhealthy feeling to its healthy counterpart—for example, panic is changed to watchfulness, disappointment and/or concern.

When changing the feelings do not change the activating event, nor use REI as merely a distraction technique, to invoke a relaxation response, mindfulness or meditation. Use strong, rational self-talk instead. After some practice, REI should only take a client a few minutes to do. The REI technique is also applicable to meta-disturbances-disturbances about being disturbed. However, REI needs to be used repeatedly over a period of few weeks to achieve good results. REI can become one of the tools in the client’s armamentarium of effective REBT tools.

Preparation. The technique should be explained and demonstrated by the therapist and then practiced by the client a few times in the presence of the therapist. All the client’s questions about the technique should be answered.

Homework. The client is asked to pick out a specific problem situation that he or she wants to address. A specific number of weeks of using REI once a day should be assigned.
**Expected outcome.** The client should experience a significant improvement in how he or she feels when the dreaded situation takes place or when it is thought about. In case of a flashback, the client should be able to have less severe emotional reactions over time.

*Application to Flashbacks of Childhood Bullying*

**Description of technique.** Some clients break out in a cold sweat when the topic of childhood bullying envelops their mind. A certain type of person or a given situation may evoke in the client the feelings of total helplessness and panic. Not always is it associated with a single given situation. Thus a plausible scenario may have to be built up so as to enable the application of REI.

**Preparation.** After the scenario has been built the client is walked through the steps by the therapist. The therapist may even describe or give examples of helpful self-talk to turn the unhealthy negative feelings to healthy negative feeling. The client is then asked to perform the exercise using the last realistic flashback that he or she can remember or another plausible scenario.

**Homework.** The client is then asked to perform the REI exercise on his or her own for a number of weeks. In every weekly session, the client’s compliance with the assignment is discussed.

**Expected outcome.** The client’s sensitivity to the given flashback is expected to be reduced. Moreover, the client is expected to become less sensitive to bullying of all kinds- past, present or future.
Concluding Remarks

Desensitization is one of the key elements in stuttering therapy. REI is effective in bringing about desensitization and changing unhealthy negative emotions to healthy negative emotions.

Managing Secondary Stuttering Symptoms Step

Introduction

If all conversations between the client and therapist have been in front of a mirror, and the client had assiduously worked on his or her assigned homework, much of the primary stuttering, secondary stuttering, unhealthy negative emotions, and self-limiting life choices will have disappeared as a byproduct. Nevertheless, some individual clients will still exhibit residual symptoms and, in others, progress in one or more of these areas will be lagging.

So far the emphasis has been on changing the irrational beliefs and modifying the brain so as not to feel as much ego distress, discomfort distress, and being upset about being upset—a meta emotional problem. All things being equal, the residual secondary stuttering, primary stuttering, and self-limiting life choices are addressed in the given order, all the while using REBT tools to both motivate and facilitate progress in therapy.

If the client exhibits any secondary symptoms of stuttering such as 1) moving muscles that have nothing to do with speech production (such as snapping of fingers or blinking of eyes, etc.), 2) excessive tensing of muscles, or 3) exaggerated or repetitious moving of speech producing muscles the therapy includes the following three sub-steps.
Elimination of Involuntary Secondary Stuttering Movements Sub Step

Description of involuntary secondary stuttering movements. In chapter VI the dissertator discussed how operant conditioning reinforces secondary stuttering symptoms such as blinking, pursing of lips, jerks of head, snapping of fingers, and/or slapping of ones thigh. Because they are operantly reinforced these symptoms become involuntary.

Therapeutic objectives. The objective of this therapeutic sub step is to eliminate these extraneous secondary stuttering symptoms.

Preparation for homework. The therapist, together with the client, sitting in front of a mirror identifies and enumerates the various secondary stuttering symptoms. Then the therapist and the client do these exact movements voluntarily while involved in a conversation.

The therapist then asks the client to describe his or her feelings while doing this. If there is any ego anxiety, discomfort anxiety, guilt at not being able to do the exercise perfectly, hopelessness, or helplessness, the irrationalities that give rise to these emotions are traced back and explored. The client is told that he or she will have to do it outside of the clinical setting. Again, if any unhealthy emotions are detected, the irrational self-talk that causes these unhealthy emotions is unearthed and disputed, establishing a more rational system of beliefs in its place using REBT techniques.

A given sequence of secondary stuttering homework. When enough clinical practice has taken place, the therapist and the client go out in the real world. First, the therapist demonstrates that it is not shameful to practice these secondary stuttering symptoms voluntarily. Then the client is asked to demonstrate practicing voluntarily these secondary stuttering movements. After that the client is given an assignment to
perform the manipulation of tension four times a day for a week. When the client comes back next week, the therapist and the client discuss both success of doing the assignment and the and emotional outcome of the manipulation of tension.

*Expected outcome of secondary stuttering practice.* One of the expected outcomes is that the client’s self-talk or beliefs change. He or she is no longer just a victim of “attacks of secondary symptoms”, but actually can actually instigate them, alter them, and eliminate them. The glimmer of hope that the client might be able to control, to a great extent—although not completely or perfectly—the unwanted secondary stuttering symptoms. His or her beliefs that he or she is victim of some outside force, some unconscious commands of their body, is being challenged, the realization my not be an epiphany but evolutionary in nature. In the realm of physically producing speech, the client learns to manipulate the secondary symptoms. It is hypothesized that the client will start, at least some of the time, to believe new rational ideas such as: “Although I may still unconsciously initiate these secondary symptoms, I can also have conscious influence over them.” Etc.

*Manipulation of Tension Sub Step*

*Description of manipulation of tension.* Stuttering is associated with tension and forcing. The first step for the client is to become aware of which muscles he or she is tensing, and then tensing a specific muscle or group of muscles even more. Finally, the client is encouraged to relax those muscles. In the first phase of this exercise, when a person who stutters encounters a stutter, he or she is asked to identify some of the muscles he or she is tensing. “Are you tensing your stomach muscles?” “Are you tensing your arm or clenching your fist?” “Are you pursing your lips?” “Do you feel tension in
your throat?” Etc. In the second phase, after the muscles are identified, the client is asked to, in turn, tense these muscles more, then relax them, and then tense them again while speaking. The third and final phase involves the person, when speaking, relax those muscles that he or she has identified as having tensed during stuttering. He or she is not expected to perfectly perform all of this. In fact, the manipulation of tension while speaking may be, at the beginning, nearly impossible. Although the final goal is to speak without tension, it is not expected of the client that he or she be able to do it right away.

*Therapeutic objectives of manipulation of tension.* The self-talk objectives of manipulation of tension are to dispute the self-talk “I can’t do it.” “I have no voluntary control over this tenseness that just appears when I stutter.” “I’m a failure if I can’t do it right away”.

The physical production of speech objectives of the exercise are to help the client demonstrate to himself or herself that he or she can manipulate the muscle tension and, with practice, can learn to control it. The byproduct of this is to convince the client that it is he or she that does the tensing; tensing is not something that just happens to him or her.

*Preparation for manipulation of tension homework.* The therapist sitting beside the client, in front of a mirror in the clinic, demonstrates how to identify and tense various muscle groups that clients usually tense during stuttering. The client then repeats the technique looking at himself or herself in the mirror. They carry on a conversation and go through all three phases described above.

The therapist then asks the client to describe his or her feelings while doing this. If there is any ego anxiety, discomfort anxiety, guilt at not being able to do the exercise perfectly, hopelessness, or helplessness, the irrationalities that give rise to these emotions
are traced back and disputed. The client is told that he or she will have to do it outside of the clinical setting. Again, if any unhealthy emotions are detected, the irrational self-talk that causes these unhealthy emotions is unearthed and this irrational self-talk is disputed, establishing a more rational system of beliefs in its place using REBT techniques.

*A given sequence of manipulation of tension homework.* When enough clinical practice has taken place, the therapist and the client go out in the real world. First, the therapist demonstrates the second and third phases to the client. Then the client demonstrates the technique three or four times while the therapist is within the hearing distance. After that the client is given an assignment to perform the manipulation of tension four times a day for a week. When the client comes back next week, the therapist and the client discuss both the physical production of speech and emotional outcome of the manipulation of tension.

*Expected outcome of manipulation of tension practice.* One of the expected outcomes is that the client’s self-talk or beliefs change. He or she is no longer just a victim of “attacks of tension”, but actually can influence how to tense certain muscle groups. The glimmer of hope that the client might be able to control, to a great extent—although not completely or perfectly—the unwanted tension. His or her beliefs that he or she is victim of some outside force, some unconscious commands of their body, is being challenged and the realization my not be an epiphany, but evolutionary in nature. In the realm of physically producing speech, the client learns to manipulate the tension. It is hypothesized that the client will start, at least some of the time, to believe new rational ideas such as: “Although I may still unconsciously tense some muscle groups, I can also have conscious influence over how I tense them.” “There really is no outside force that
makes me tense my muscles.” “I am not a helpless victim; I can do something about this unwanted tension.” Etc.

*Using Proprioceptive Feedback Sub Step*

*Description of using proprioceptive feedback.* Helliesen (2006) observed that a stutterer monitors his or her speech through auditory feedback. He further states that this auditory feedback is so distressing that the stutterer defines it as unbearable. The consequence is that the stutterer stops monitoring his or her speech altogether. Therefore, it is very important to teach the client how to use proprioceptive feedback to monitor his or her speech production. Proprioceptive feedback has two parts: 1) the tactile feedback—where one monitors the body parts involved in speaking through touch—and 2) the kinesthetic feedback—where the focus is on the motion of lips, tongue, etc.

The first step is for the client to become aware of both touch and motion by slow, exaggerated speech movement. At first, he or she concentrates on monitoring specific speech-forming body parts, first for tactile feedback and then for kinesthetic feedback. Initially the client will do this while whispering or not even voicing. Then, finally, the client is encouraged to start increasing the voicing while using proprioceptive feedback. This exercise is built upon the client’s experience with the previous technique where here he or she was asked to identify some of the muscles he or she is tensing. “Are you monitoring how your lips touch each other?” Do you feel what your tongue is touching?” “Are you aware of your lip movements?” “Are you monitoring what your tongue does?” Etc. After the client feels comfortable with getting feedback in both tactile and kinesthetic modes, the exaggeration can be reduced so that it does not interfere with producing normal sounding and looking speech. In the end, the monitoring is turned on
and off. It is not beneficial to have a client constantly consciously using proprioceptive feedback. This is a transitional tool that is used as a scaffold only during the process of gaining more fluent speech. He or she is not expected to be perfect. In fact, using proprioceptive feedback while speaking may be, at the beginning, difficult.

*Therapeutic objectives of using proprioceptive feedback.* The self-talk objectives when using proprioceptive feedback are to dispute the self-talk “I can’t do it.” “It is too hard to use this technique.” And the “I am a failure if I can’t do it right away”. It is important for the client to build a high tolerance for frustration. The client is taught how to manage feelings of frustration using REBT cognitive methods.

The physical production of speech objective of the exercise is to help the client demonstrate to himself or herself that he or she can, through proper feedback techniques, form sounds and words under conscious control. The byproduct of this is to convince the client that it is he or she that has conscious control, if required, over their muscles.

*Preparation for using proprioceptive feedback homework.* The therapist, sitting beside the client, in front of a mirror in the clinical setting, demonstrates and describes the technique while mouthing words without sound, when whispering, and finally when adding voice to the process. The client then repeats the technique looking at himself or herself in the mirror. Next, they carry on a voiced conversation using the exaggerated movements. Finally, the exaggeration is removed from the speech.

The therapist then asks the client to describe his or her feelings while doing this. If there is any ego anxiety, discomfort anxiety, guilt/shame at not being able to do the exercise perfectly, hopelessness, or helplessness, the irrationalities that give rise to these emotions are traced back and disputed. The client is told to practice outside of the clinic.
Again, if any unhealthy emotions are detected that cause irrationalities, they are dealt with using REBT disputation techniques.

*A given sequence of using proprioceptive feedback homework.* When enough clinical practice has taken place, the therapist and the client go out in the real world. First, the therapist demonstrates the exaggerated movement voiced speech. Then the client demonstrates the technique in two situations while the therapist is within the hearing distance. After that, the client is given an assignment to perform proprioceptive feedback and using somewhat exaggerated speech a couple times a day for a week. The client is asked to see if he or she can find a friend or a fellow stutterer with whom to practice this technique. When the client comes back next week, the therapist and the client discuss both the physical production of speech and emotional outcome of the using proprioceptive feedback.

*Expected outcome of using proprioceptive feedback practice.* One of the expected outcomes is that the client’s self-talk or beliefs change. He or she is gaining more self-confidence in being able to change his or her speech. There is hope that the stuttering can be drastically changed. When this technique is used assiduously and the speaker becomes quite competent at it, it can result in a dramatic increase in fluency. There is then the danger of the client leaving therapy prematurely, before the gains are stabilized and relapse prevention techniques are taught. In other clients the results are slower to evolve.

In the realm of physically producing speech, the client learns to use proprioceptive feedback to dissipate a lot of tension and hard contact stoppages in his or her speech. It is hypothesized that the client will start, at least some of the time, to believe new rational ideas such as: “Although I may still stutter, I can now play around with my
speech and be aware of what I am doing.” “There really is no magical answer to my stuttering problem; it takes a lot of practice and going through various steps to gain more and more fluency. But the effort will not have to be a continuous one, because I see improvement in my speech even though I don’t constantly use proprioceptive feedback.” It is important for the therapist to reinforce these new rational ideas and to act as both a coach and a cheerleader. Nevertheless, on the other hand, the therapist needs to remind the client that perfect speech, even in normal speakers, is not possible. Even some severe disfluencies will surface from time to time, but these are to be expected and do not signal a total relapse.

Application of Adapted Mainstream Techniques to Managing Primary Stuttering Step

Background

The mainstream stuttering therapy does work in as far as it provides some persons with a means to manage their stuttering. However, relapses are frequent due to effort required to manage the stuttering and the unnatural sounding speech that is often the result of stuttering being managed. The dissertator is squarely in the camp of Wendell Johnson (1961) in that he believes that easy repetitions are more natural sounding than smoothed-over plosives. Johnson also believed that the main goal of stuttering therapy should be the change of attitudes toward stuttering. However until the appearance of REBT and other Cognitive Behavioral Therapies, there was no systematic means to change attitudes toward stuttering. This is not to say that some of the clients while doing exercises used in conventional therapy did not change their attitudes toward stuttering. However, this has been more or less a hit or miss affair. The way that this dissertation employs the standard stuttering exercises assures that: a) the outcome of the therapy is
characterized by easy, natural sounding disfluencies of early speaking such as “ma-ma” and “pa-pa” stripped of all negative emotional reactions and b) during the exercises the focus is not only on managing the production of speech but changing the attitudes toward stuttering and self-talk concerning it. Over time this will lead to mostly spontaneous fluency with managed fluency as a fall-back option.

Objectives

Unlike the conventional stuttering therapy, when incorporated in REBT of CPSS the conventional exercises have two objectives. The most important of these objectives is the change of beliefs or self-talk based on de-awfulizing and de-urgentizing. These can be expressed by the following self-talk sentences: “When I speak, although I want to hurry and say everything I want to say, nothing awful, terrible or horrible happens if I stop, slow down and repeat a word.” “There is nothing awful about stuttering.” “I can play with my speech without getting anxious and upset.” “This is only a step in therapy, but a good step.” The other objective is the same as in the conventional stuttering therapy. To wit, it is to learn to manage physical production of speech in an easier forward moving manner.

Homework

For each of the conventional stuttering exercises the therapist sitting side by side in the clinical setting demonstrates the technique. The client then repeats the technique looking at himself or herself in the mirror. They carry on a conversation in this manner applying the technique from time to time depending on the frequency in stuttering.

The therapist then asks the client to describe his or her feelings while doing this. If there is any ego anxiety, discomfort anxiety or shame, the irrationalities that give rise
to these emotions are traced back and disputed. The client is told that he or she will have to do it outside of the clinical setting. Again if any unhealthy emotions are detected the irrationalities are dealt with using REBT disputation techniques.

When enough clinical practice has taken place, the therapist and the client go out in the real world. First, the therapist demonstrates the technique to the client. Then the client demonstrates the technique three or four times while the therapist is within hearing distance. After that the client is given an assignment to perform the technique four times a day for a week. When the client comes back the next week, the therapist and the client discuss both the physical production of speech management technique success and the emotional outcome performing this technique.

Techniques Adapted from Conventional Stuttering Therapy-Sub Steps in Therapy

Cancellation. When a person who stutters encounters a block or repetition he or she is instructed to stop, take a deep breath, and repeat the word using the easier Iowa bounce. He or she is not expected to be in any way perfect. In fact the cancellation of the block may, at the beginning, turn into a real stutter and be more severe. Although the final goal is an easier way of stuttering, it is not expected that the client would be able to do it right away.

Holding onto a stutter and bubbling out of it. There are two ways of managing stuttering (e.g. controlling the stutter). The mainstream approach is to use what is called a pullout—to be discussed as the next alternative step. The dissertator’s alternative approach is holding onto a stutter (either block or struggling repetition) until the person who is stuttering gets a feeling that he or she is in control, extending it a few seconds longer, and then turning into an easy Iowa bounce. Thus, the process has three parts: a)
the involuntary stutter, b) voluntary extension of the stutter, and c) a voluntary pseudo stutter that terminates what started as an involuntary voiced or unvoiced block or a forced repetition. With all the preparation in voluntary pseudo stuttering, in release of tension, and in proprioceptive feedback, as well as the thorough technique of disputing irrational beliefs or self-talk about stuttering, this step is made easier and achievable. Here for the first time, if changing attitudes was not enough to alter a deeply ingrained habit, the client can feel that he or she is in the driver’s seat. Nevertheless, the therapist has to clearly explain the objectives of this step to the client. The biggest task is to talk the client into holding a stutter beyond the time that the client can terminate it, which can be a tough sell. As with all of the other stuttering therapy steps, the execution is not expected to be perfect. In fact, holding onto a stutter and bubbling out of it while speaking may be, at the beginning, nearly impossible. Although the final goal is to terminate every block with a feeling of triumph over the disfluency, it is not expected of the client that he or she be able to do it right away.

_Holding onto a stutter and pulling out of it._ As stated above there are two ways of managing stuttering (e.g. controlling the stutter). The conventional approach is to use what is called a pullout. Although the dissertator believes that the pullout produces a non-natural speech, if the client has had past experience with stuttering modification and/or resists using easy Iowa bounces, the therapist may have to offer the alternative approach of holding onto a stutter and pulling out of it. The pulling out part uses proprioceptive feedback. The client is asked to monitor both the tactile feel and the motion of the articulators. Just like in bubbling out of a block, the client is asked to hold onto a stutter (either block or struggling repetition) until he or she feels in control, extending it a few
seconds longer, and then turning into a proprioceptively–managed, slower, easier
dragged-out, somewhat slurred sound. This is rather easy on the sibilants and vowels but
harder on the plosives and hard contact sounds. The latter two categories have to be altered so that it is not exactly a natural sounding speech, but it does keep the speech forward moving. The process has three parts: a) the initial involuntary stutter, b) voluntary extension of the stutter, and c) an altered pullout of the stutter that terminates what started as an involuntary voiced or unvoiced block or a forced repetition. With all the preparation in proprioception, in release of tension, and the thorough technique of disputing irrational beliefs or self-talk about stuttering, this step is made easier and achievable. Here for the first time, if changing attitudes was not enough to alter a deeply ingrained habit, the client can feel that he or she is in the driver’s seat. Nevertheless, the therapist has to clearly explain the objectives of this step to the client. The biggest task is to talk the client into holding on to a stutter beyond the time that the client can, under voluntary control, pullout. As with all other stuttering therapy steps, the execution is not expected to be perfect in any way. In fact the holding onto a stutter and pulling out of it while speaking may be, at the beginning, nearly impossible. Although the final goal is to terminate every block with a feel of triumph over the disfluency, it is not expected of the client that he or she be able to do it right away.

Easy onsets. A good stuttering management technique to teach oneself that speech can be altered is an easy onset. This technique can be mastered once a person has learned proprioceptive feedback. The client is asked to monitor both the tactile feel and the motion of the articulators. Before saying a given word or sound, the client is asked to pass an invisible, inaudible flow of air over the vocal folds while focusing on
proprioceptive feedback. The voicing is introduced right after passing the invisible, inaudible air stream. There is no stoppage between the invisible, inaudible air stream and the formation of sound, and there is no distortion of the sound. In the beginning, the client can exaggerate or elongate both the invisible, inaudible air flow and the onset of voicing. This is easier on the sibilants and vowels but a little harder on the plosives and hard contact sounds. The latter two categories have a voice onset event, whereas the sibilants can be “smoothed into”. This process keeps the speech forward moving. In review, this process has three parts: a) the initial focusing on the proprioceptive feedback, b) the invisible, inaudible flow of air over the vocal folds, and c) the easy onset of voicing. If the proprioception techniques have been mastered and the client can effectively dispute irrational beliefs or self-talk about stuttering, the technique does not take great deal of time or effort. The client can start to feel real mastery over speaking. Nevertheless, the therapist has to clearly explain the objectives of this step to the client. As with all other stuttering therapy techniques, the execution is not expected to be in any way perfect. In fact, the easy onsets while speaking may be, at the beginning, nearly impossible for sounds that the client devoutly believes that he or she will stutter on. Although the final goal is to apply this technique to every sound, it is not expected of the client that he or she be able to do it right away.

*Using low vibrant voice.* Another stuttering management technique—though not used by conventional therapists—is to teach the client to speak in a relaxed way using low, vibrant voice. The relaxed, low, vibrant voice consists of lowering the pitch of the voice while being relaxed. In the beginning, the client can exaggerate this technique.
Elongation of vowels. Sometimes the conventional stuttering therapists teach the clients to elongate the vowels. This technique may sound simple, but frequently is very effective when combined with the above mentioned techniques. This technique appears to be more effective when the client is in an advanced stage of therapy.

Handling on-coming blocks. Most people with CPSS are quite aware what sounds or words will give them trouble. They have built pathways in their brain which scan ahead and signal the danger of an on-coming block. When the client has mastered the basic conventional techniques, he or she has built a repertoire of techniques for handling these on coming blocks to keep the stutters manageable and the speech forward moving. This is the menu to choose from to pre-empt the hard block: 1) voluntary Iowa bounce; 2) the pre-emptive pullout, also called preparatory sets; and 3) easy onsets. The dissertator believes that voluntary Iowa bounce is preferable for three reasons: 1) it prevents the client from trying to hide his stuttering, i.e. it advertises to the listener that the speaker has some disfluencies; 2) it provides the client with evidence that forward moving, easy repetitions are not awful, and 3) it is a tool to pre-empt hard, struggling stutters. However, it is not always possible to convince the client that this is the best way to proceed. The client may choose one of the other two options. The therapist may concede to the client if and only if the client promises not to “chase the fluency god” and let other people know that he or she has occasional disfluencies by advertising as described above.

Expected Outcome

Each of the techniques when used as suggested above firms up the client’s self-talk or belief change. He or she is no longer just a victim of stuttering, but actually can influence how they stutter. The client gains a glimmer of hope that he or she might be
able to control, to a great extent—although not completely or perfectly—his or her stuttering. His or her beliefs that stuttering is awful and that one must urgentize about stuttering also change, although the change may not be an epiphany, but rather evolutionary in nature. In the realm of physically producing the speech, the client learns an easier, less disruptive ways of stuttering. This results in more frequent spontaneous fluency and the ability of the client to manage his or her stuttering the rest of the time.

*Stabilization and Relapse Prevention Step*

**Stabilization**

Stabilization consists of turning over all the activities in therapy to the client: 1) monitoring of unhealthy negative emotions; 2) tracing back these emotions to the unhelpful irrational beliefs; 3) disputing or challenging these irrational beliefs to come up with more helpful rational beliefs that lead to healthy negative emotions; 4) continuing to advertise and 5) practice managing pre-emption of upcoming blocks. The client is told that in rare cases when a struggling stutter reappears, the client has to cancel it as per the directions above.

During this step, the attendance of NSA meetings as well as participation in Stutter_Less_With_REBT group is encouraged. Further reading of REBT materials and the newest developments in stuttering therapy are encouraged.

**Relapse Prevention**

Relapses are prevented by keeping up the work outlined above. The client is taught the acronym C-CHALE-ET. The first C stands for Chasing down all irrationalities about stuttering. The second C stands for Challenging or disputing these unhelpful ideas about stuttering and changing these irrational/unhelpful ideas to more rational/helpful
ones so that the unhealthy negative feelings are changed to healthy negative feelings that help in managing the stuttering. Likewise, the other letters have assigned meanings: a) H stands for building a sense of humor about stuttering and about life; b) A stands for Accepting oneself unconditionally whether one stutters or not; c) L stands for using Low vibrant voice; d) the first E stands for Exuding relaxed calmness; e) the second E stands for Elongating vowels; and f) T stands for Tracing down all the Tension and consciously working to release it. At first, the client is asked to go over the acronym three times a day (more if needed) and use it as the occasion arises. The time and effort spent on this can be scaled back as spontaneous fluency appears more and more of the time. As a minimum, the client is encouraged to do a few voluntary pseudo stutters—iowa bounces—a day. This is kept up until complete spontaneous fluency appears and the client no longer is obsessed about stuttering.

*Termination Step*

Most therapy is terminated prematurely because of the expense of the therapy. A better alternative is to begin spreading out the visits during the stabilization and relapse prevention steps. Alternate modes of check-in, such as long distance therapy via phone or e-mail, are suggested. These can be abbreviated to the point where the client reports his or her progress and any problems encountered, along with his or her solutions. The therapist responds in an abbreviated manner, complimenting the client on his or her creativeness and persistence and/or suggesting alternative approaches to his or her encountered problems. If the client feels the necessity to come back for refresher sessions, he or she is accommodated. The best way for the client to keep in touch is via the Yahoo! Stutter_Less_With_REBT Group, although both the client and the therapist
may feel more at ease with personal correspondence or phone calls. A short phone call at a designated time is preferred, because a phone call will provide the therapist with evidence that the client is either managing his or her stutter well, or has become spontaneously fluent.

Duration of Therapy

The duration of therapy depends upon various factors including the severity of the genetic components, the trauma experienced by the client due to his or her stuttering, the skill of the therapist, the motivation and intelligence of the client, and the rapport between the client and the therapist. The variables are many and the exact influence on each of the variables is elusive.

However, in order to establish an estimate one can also look at how the therapy was designed. If each step or sub step is equated to a unit, there are a total of twenty four units or lessons: 1) eleven units based on the REBT steps, 2) the direct work on secondary stuttering step that is divided into three sub steps or units/lessons, 3) the work based on conventional therapy techniques that yield seven sub steps or units, 4) the unit on stabilization and relapse prevention, and 5) the termination unit. Thus, the therapy consists of 23 units. Each unit would consume two weeks of calendar time. One week to learn the principle/technique taught in the particular unit and another week to master it. Therefore it is estimated that the therapy would take 46 calendar weeks of time.

Limitations and Caveats of This Therapy

Introduction

The proposed therapy includes techniques from both REBT and conventional stuttering therapy. The techniques from conventional therapy have a totally different
emphasis on them. The emphasis is on focusing on the belief system (self-talk) not on acquiring the management of speech production skills, albeit these are also considered equally important as a fall back position and stop gap measure. Because of the selection of techniques neither psychologists nor SLPs who want to do therapy with clients with CPSS currently posses all the prerequisite skills.

Skills to Be Acquired by Psychologist

The licensed psychologists desiring to provide services to this population would need to become familiar with the subset of conventional stuttering therapy techniques by both reading this dissertation and becoming familiar with the basic conventional stuttering therapy techniques provided on SFA (2009) on DVD Stuttering: Basic Clinical Skills.

Skills to Be Acquired by SLP

The licensed SLP desiring to provide services to this population would need to study the REBT counseling theory and techniques described in this dissertation and view two video tapes: a) Young (date unknown) Understanding and Overcoming Emotional Upset and b) Wolfe (1996) Overcoming Low Frustration Tolerance. If the SLP has not had exposure to CBT or REBT counseling in his or her educational journey, the dissertator believes that this deficiency needs to be addressed by attending at least one or two workshops on the topic, preferably one that includes REBT.

When a Client Reports No Significant Improvement in Fluency When Speaking Alone

This therapy was created to deal with developmental stuttering. When a client reports no improvement when speaking alone two options are possible: a) the client has neurogenic stuttering as a result of brain trauma, such as a physical insult to the brain or
he or she has had a vascular accident, such as a stroke; or b) the client has an unusually strong genetic component to his or her stuttering. In either case the therapy presented in this dissertation would have to be adapted and buttressed with extra emphasis on conventional stuttering therapy techniques—the client has to relearn how to speak, often utilizing different regions of the brain, that are available to him or her due to the plasticity of the brain.

Factors That Influence the Outcome of Therapy

The success of the therapy—just as any other psychotherapy or counseling—depends upon various factors including the severity of the genetic components, the trauma experienced by the client due to his or her stuttering, the skill of the therapist, the motivation and intelligence of the client, and the rapport between the client and the therapist. As the therapy is tested out in the field other variables may be discovered.

Since the duration of therapy is estimated to be one year, there may be significant attrition both due to the strain put on financial and time resources. Those who are likely to be most successful are those who are motivated, mature, and ready for therapy. This tends to be true for most types of counseling or psychotherapy. No differences in the outcome based on gender are expected. However, clients from cultures which are more individualistic are expected to have better results, because these clients would have an easier time to accept the basic tenets of REBT which emphasizes self-reliance, unconditional self-acceptance, and ability to overcome the feelings of guilt and shame.

The dissertator’s bias is that people who are goal and task oriented will do significantly better than those who are more interested into fitting in and belonging. The dissertator subscribes to the view that consumer groups should not be support groups but
self-help groups. In a self-help group a goal is specified and all the members exchange information about sub-goals and tasks which need to be done to progress toward the goal. In a support group the emphasis is on feeling that you are not alone, that you have support no matter what one does or does not do. Ellis (1994) described the latter as feeling better and the former as getting better. In getting better one acquires skills that can be used to handle similar circumstances and obtain the desired results. The dissertator’s bias is that it is more optimistic and hopeful to pursue goals and feel better as a result of the creative activity of solving a practical problem, than to soothe one’s ego from the approval of other people.

Status of Client Post REBT of CPSS

Just because a client no longer is seriously handicapped by stuttering and all the concomitant beliefs and emotions, there is no guarantee that he or she is well adjusted to society. Because of the previous life choices, the client may be deficient in social skills, vocational stability, and having the proper social support system. All of these areas require goal setting, planning, and execution of the prescribed tasks to achieve the aspired success and skills. Some of these things can be acquired through participation in self-help and support groups, others may require professional help.

Importance of this model of stuttering therapy

Differences With Respect to Other Models

The difference from other models in therapy is the importance placed on the individual as a whole focusing on the changes in cognitions, emotions, and behaviors. The dissertator uses the ABCDE model of therapy. The emotions and behaviors are used to trace down the irrational beliefs which then are then disputed using cognitive, emotive,
and behavioral tools. Management of stuttering symptoms clearly takes a secondary, although important, role in the therapy. This emphasis on the counseling or psychotherapy distinguishes the therapy described in this dissertation from the conventional stuttering therapy, where the management of symptoms via traditional techniques is the center of the therapy. However, since the problem is deeply engraved in the synapses of the brain, temporary management of the symptoms of primary and secondary stuttering is necessary before the spontaneous fluency can be acquired.

*Why This Approach Is Better Than Anything Else So Far Published On the Subject*

Precisely because cognitions and emotions are placed at the center of the therapy as the evidence from neuropsychological standpoint indicates they should be, these should be the focus of therapy. The management of the voice producing habits are addressed later in the therapy once the root causes of what propagates the stuttering are adequately dealt with.

The real advantage of the approach to therapy in this dissertation is that it is based on a realistic model of how stuttering therapy develops. This is the stage model outlined in chapter VI. It is based on the epigenetic model of development throughout the lifespan and includes both the classical and operant conditioning as well as the cognitive learning theory models.
CHAPTER VIII
SUMMARY, CONCLUDING REMARKS, AND FUTURE DIRECTIONS

Summary

Introduction

Three original things were accomplished by this dissertation. First, operational, holistic chronic stuttering was defined as CPSS including not only primary and secondary stuttering symptoms—symptoms visible to an outside observer—as well as the parameters for the inner experience of the person who stutters. The definition includes the affective, cognitive and behavioral components that accompany the language disfluency. Establishing definite parameters that can be measured by an outside observer or by honest self-reports provides a solid foundation for both the construction of the proposed etiology and the proposed therapy.

Second, a complete, detailed, and originally reframed etiology of CPSS was developed using REBT principles. The etiology not only describes the onset of stuttering with all its concomitant manifestations of both external symptoms and internal states, but also describes in detail the iatrogenic aspects of CPSS and how stuttering is maintained throughout the lifespan of a person. The dissertator asserts that devising a therapy without a complete and detailed understanding of the forces involved in the development and perseverance of CPSS makes it impossible to construct an effective and efficient therapy resistant to relapse. The model of stuttering therapy developmental stages is based on
epigenetic systems theory and includes elements of classical and operant conditioning, as well as cognitive learning theory.

Third, the most important and innovative part of this dissertation is the step by step construction of the components of therapy to help the 20% of persons who are either resistant to the common approaches to therapy or are subject to relapse once therapy has ended. Although elements of both REBT and current stuttering therapies are used, the emphasis of therapy and the synthesis of the sequencing of the steps is unique to this dissertation. Since the therapy is REBT based, it uses on the emotive and behavioral aspects to track down irrational cognitions and then challenges them using the full set of cognitive, emotive, and behavioral tools to modify the brain so as not to evoke ego and discomfort anxiety that perpetuates the stuttering. Behavioral exercises, like practice in sports and sports psychology, are used to teach the client to manage stressful situations by evoking the proper behaviors to manage stuttering. Unlike currently favored conventional stuttering therapies—stuttering modification and fluency shaping—the emphasis is placed squarely on changing irrational thinking and unhelpful emoting.

*Holistic Definition of CPSS*

This dissertation breaks with the historical tradition of treating stuttering as a problem with the physical speech production mechanism where cognitions and emotions are of secondary importance. The dissertator—having studied neuropsychology and brain mechanisms—observed that although neuropsychology cannot yet give definite answers as to how a child learns to talk, it is possible to hypothesize how stuttering develops and shed some light on the factors that describe stuttering and how it might have evolved in contrast to normal speech. The brain generates signals to produce speech. Speech has a
great deal of emotionality associated with it. This emotionality may interfere with speech production to cause disfluency. Emotional reactions are controlled by two circuits: a) the “fast circuit” involving data in the limbic system that has been classically conditioned and is very difficult, if not impossible, to extinguish, and b) the “slow circuit” that modifies the emotions in the prefrontal cortex regions. The database for “fast circuit” emotions is acquired through experience and stored in structures found in the sub-cortical regions. The database for the “slow circuit” control of emotions is stored in the prefrontal cortex and may be influenced by cognition. In either case, massive practice is required to alter the information stored in the synapses—to modify the circuitry of the brain. The “fast circuit” can only be chemically modified through in vivo or imagery desensitization. The “slow circuit” is amenable to change through massive cognitive re-organization.

This dissertation asserts that even though the outward signs are primary and secondary stuttering, the synapses of both the limbic system and the prefrontal cortex--instead of parts of the brain that produce speech—are the main areas to be focused on. The dissertator built upon the observation that most, if not all, developmental stutterers are quite capable of producing spontaneous fluency when speaking alone or in situations where they place no demands upon themselves to speak fluently. Because of the above observations, the basic definition of CPSS not only included behavior, but also emotions and cognition. This CPSS definition also gives a more prominent place to the avoidance behaviors that shape the stutterers life choices and ability to pursue any and all goals that normal speakers pursue. This new, extended definition of CPSS more realistically captures what has to be addressed in therapy. Although the behaviorists tried to describe
the syndrome by visible and audible events that can be recorded on a variety of media, these are insufficient to present the totality of the problem.

Etiology and Perseverance of CPSS

Basic Groundwork

A therapeutic intervention is most effective if it is informed by the etiology and perseverance of a condition. Since emotions and belief systems are considered to be pivotal, the dissertator chose to use an REBT framework in postulating the etiology and perseverance of CPSS. The interaction—so clearly defined by REBT--among beliefs, emotions, behaviors and perceptions is an integral part of the development of the model of etiology and perseverance of CPSS. It is noted that the belief systems give rise to emotions which then interfere with proper speech production.

The present body of work describes the various factors that influence the etiology and presents a typical sequence of acquiring developmental stuttering. Although some parts of the etiology model—such as classical conditioning and operant conditioning roles--have been described elsewhere in the literature, the utilization of the REBT framework in depicting the evolution of the syndrome is unique to this dissertation. As information from the response of the environment to internal experiences of stuttering are stored in synapses, there is an equivalent reflection of this data as conscious and pre-conscious beliefs and attitudes. These beliefs and attitudes are discussed as they sequentially appear.

The dissertator agrees that there exists a basic inherited tendency for some persons to have more disfluent speech than others. This is well documented in the stuttering therapy literature. He, however, goes one step further and postulates that
persons with CPSS are characterized by anxious or fearful behavior especially in speaking situations. The dissertator, furthermore, proposes that persons with severe CPSS have traits consistent with those found in the Cluster C personality spectrum.

Although no definitive studies have established the effectiveness of REBT in dealing with Cluster C personality disorders, Davidson and Neale (2001) write that Cluster C personality disorders are best treated with REBT and CBT. Ellis and Abrams (2009) also state that REBT is particularly suited for the treatment of Cluster C personality disorders. Rennenberg et al (1990) single out the avoidant personality for treatment with desensitization and REBT. Millon (1996) and Turkat and Maisto (1985) report that avoidant personality disorder is amenable to REBT coupled with social skills training. Thus, the dissertator feels justified in pursuing the application of REBT with focus on desensitization and social skills training to CPPS. In order to lay a theoretical foundation for therapy, the dissertator believes it is important to define the development of stuttering in terms of REBT, i.e. paying particular attention to the belief system that evolves during the stuttering development.

Stages of Developmental Stuttering During Lifespan

The proposed stages of the etiology of CPSS—discussed in detail in chapter VI—are original to this dissertation. The emphasis is that at each stage the brain is biochemically modified and the synapses store data. Some of these data can be translated into one or more conscious or pre-conscious beliefs. The data is stored both in the limbic system and in the prefrontal cortex. The stages are given below.

Genetic stage. When the ovum and the sperm are joined the individual inherits a certain genotype which—according to epigenetic theory—leads to an individual
phenotype when the genes are expressed. Although behavioral tendencies, cognitive
tendencies and emotional tendencies that predispose an individual to CPSS are inherited,
if the genes are not expressed CPSS does not develop.

*Pre-natal stage.* During the gestation period, the embryo’s environment results in
some genes becoming weaker and other genes becoming stronger. Some genes form
clusters that give the unborn child different characteristics, and some genes even stop
functioning all together. The body of an about-to-be-born infant has already been
subjected to an environment that either increases or reduces the probability of developing
CPSS.

*Birthing stage.* Prematurity and deprivation of oxygen during the birthing process,
especially when the umbilical cord is entangled around a baby’s neck, may delay speech
development, as well as reduce the ability of the child to cope effectively with the
resulting difficulties. No data exists on determining how oxygen deprivation affects the
development of CPSS.

*Early language acquisition stage.* This is the stage when unforced repetitions such
as “goo-goo”, “ma-ma”, etc.—called stuttering-like disfluencies (SLDs)—are the rule
and not the exception in vocalization. Some children who end up stuttering have
oversensitive parents who became overly concerned when their child fails to progress
beyond this stage and/or their SLDs extend longer than usual. If any therapy is to be
done, it is to be done with the parents only so that they provide a less stressful
environment for the child. The child may have become wary of speaking and shy away
from it instead of being playful about it and eager to develop skills associated with it.
Awareness of speech difficulty stage. In this stage the child himself or herself becomes aware that he or she has difficulty in expressing his or her thoughts. This may be due to either internal awareness or someone externally calling attention to their speech. Awareness of having difficulty with speech fluency is not in itself a bad thing. (The difficulty results if the child, because of his or her inborn personality traits or because of external disapproval, starts to have irrational beliefs which lead to feelings of frustration intolerance and some potentially self-defeating habits.) A typical irrational belief is that he or she can’t stand the way he or she talks. However, at this stage the child may or may not develop any irrational ideas about his or her speech.

Comparison to other’s stage. The dissertator stipulates that there is a stage when the child starts to compare his or her speech development as lagging behind his or her peers. This comparison of himself or herself to others may lead to conditional low self-esteem and impede unconditional self-acceptance. At this stage if a child asks about his or her speech difficulty, it is best to acknowledge it, but not identify the child as the problem, but the problem—difficulty in speech development—as the problem. Otherwise, the child could form the irrational belief that he or she should talk like a normally fluent child.

Something-is-deficient-about-me and labeling stage. Another stage that the dissertator postulated is the stage where the child decides that there is something deficient about him or her as a total being and internalizes the label of himself or herself as a stutterer. The irrational idea “Fluent speakers are superior to me” gets established in the child’s mind.
Classical conditioning associating speech with danger and anxiety stage. The dissertator postulated that not all stages are sequential. Thus, the classical conditioning associating speech with danger and evoking a “fight or flight” response may occur in parallel with some of the above stages. A typical irrational idea developed during this stage is that something is dangerous—having SLD is awful, because somebody might laugh at me—about certain speaking situations. The child resorts to avoidances or adopts an “I must fight through my speaking situation” attitude—clearly an irrational idea, because it leads to further complications.

Operant conditioning of forcing/struggle in speech phase. Once a person’s speech flow is frequently interrupted by blocks, repetitions and prolongations of speech and the person is aware that this is an undesirable state, he or she becomes both anxious and impatient to move on. When stuck, he or she may sometimes find that forced sounds will eventually get him or her over the stoppage. This results in operant conditioning of the struggle, forced speech, and avoidances. The irrational ideas that he or she generates in his or her head are: “I can’t stand being stuck,” and, “Anything is better than not being able to get out immediately what I want to say.”

Operant conditioning of secondary symptoms stage. The dissertator asserts that secondary symptoms are established by accidental association of a non-speech related movement with getting through a block. The irrational ideas are the same as in the above stage but usually preconscious in nature.

Speech situation choice and avocational and vocational choice stage. As a person reaches adolescence his or her choices of which situations to enter are limited by his or her beliefs that the pain of the situation is not worth the possible gain. Being terrorized by
their stuttering, the adolescent makes less than optimal choices with respect to jobs and social interactions. A number of irrationalities guide the adolescent’s choices, including—but not limited to: a) “Stutterers are losers”, b) “I can’t stand criticism and rejection”, etc.

_Iatrogenic traumatization and hopelessness building stage._ Regardless of the form of therapy: a) attempts at self-therapy, b) informal help by the family, or c) formal speech therapy, some stutterers fail repeatedly and are traumatized by the experience. The therapy gives rise to irrational beliefs such as: “I can’t be helped by any therapy” and “Stuttering is truly unbearable and must be avoided at all costs.”

_Reaction stage._ The dissertator postulates that many people become embittered by their life failures, often caused by their own poor choices. These people turn their aggression toward others. A typical irrational belief is: “People should be aware of how difficult life is for me and accommodate my stuttering or else they should be damned to hell.”

_Productive therapy stage._ The dissertator has postulated that some people stumble upon self- or other-therapies that help them overcome their stuttering and become spontaneously fluent speakers in most situations, or at least are able to achieve managed fluency. The dissertator believes that the REBT therapy will be effective and efficient for most people with CPSS. This requires the replacement of irrational ideas by their self-actualizing counterparts as summarized in chapter VII in this dissertation.
The REBT Directed Stuttering Therapy

Overview

This section reviews and summarizes some of the originally synthesized material presented in chapter VII which is the application of REBT to stuttering therapy. The reader should be aware that the uniqueness and ingenuity is not in the component parts—which are taken from REBT, stuttering modification, and fluency shaping techniques—but the unique synthesis, emphases, selection, and adaptation of the techniques. The importance of modeling and assigning of homework, as well as the collaborative process, and teaching the client to become his or her own therapist cannot be overemphasized. In other words, the real therapy takes place in the real world, not in the clinical setting.

Typical Sequence of Therapy Steps

Justification of utilizing steps to illustrate therapy process. In truly collaborative, constructivist REBT no two therapies run the same course. There are important reasons for this. First, every client and every therapist has constructed their social reality differently. Second, every client and every therapist brings to therapy different abilities and modes of operation. Third, every client presents an idiosyncratic combination and severity of Irrational Beliefs, of primary and secondary stuttering behaviors, perceptions about stuttering, and life choices. Fourth, every client may be in a different psychological space due to outside circumstances. Fifth, every client has their history of failures in self- and other-directed therapy. The reasons go on and on.

Nevertheless, as an information transmission medium, the dissertator found giving typical therapy steps advantageous. These steps can also be used to devise a therapy manual which then can be used to study the effectiveness and efficiency of the
proposed REBT therapy of CPSS. What follows is a top-down outline of the steps. For the actual therapy to be done, the reader is referred to chapter VII.

_Listening to the client’s view of goals and processes in therapy step._ The dissertator stipulates that the most important step in therapy is to set a realistic set of goals and come to an understanding of what is going to take place in therapy. In order to establish a meaningful therapeutic relationship the therapist has to let the client talk about his or her expected outcome of the therapy and his or her view on how the therapy will be conducted. The therapist needs to do active listening to understand the client’s point of view.

_Reaching a therapeutic alliance with the client step._ After the client has been heard the therapist and the client has to reach an understanding of the goals of the therapy, the role of the client, the role of the therapist, and how the therapeutic process will take place. The therapist has to be able to encourage the client that the REBT approach to the therapy process is practical.

_Overview of REBT and its application to CPSS step._ In the development of this therapeutic approach the dissertator has placed the emphasis on changing the beliefs that generate emotions that interfere with proper speech production. The technique chosen to do this is REBT. The client needs to learn to become a competent REBT self-therapist and establish a habit of applying REBT to the CPSS. The client cannot accomplish this without learning REBT. The basics of REBT are taught in this step.

_Unconditional self-acceptance (USA) step._ It may seem paradoxical (but it is not) that to be able to work on becoming spontaneously fluent and to acquire the tools to build managed fluency, a client needs to accept himself or herself unconditionally whether he
or she stutters or not. In this step the REBT concept of USA is specifically applied to the client with CPSS. The client really needs to understand that he or she can lead an enjoyable, creative life regardless of the severity of his or her stuttering. Only then can he or she work on becoming more fluent. As with every step the goal is not perfection.

**Motivational step.** The dissertator believes that motivation serves a pivotal role in all therapy. The client needs to be able to envision himself or herself as being able to accomplish his or her negotiated goal of being mostly spontaneously fluent with times of managed fluency. The motivation is an ongoing process throughout the therapy. The details of how this is accomplished are given in chapter VII of this dissertation.

**Identification step.** The dissertator believes that the above steps have to precede this important step of the client identifying all of the symptoms of his or her CPSS. It is ironic that stuttering is what a client does presumably in order not to stutter. However, the client’s efforts have resulted in the myriad symptoms of CPSS. This includes what he or she demands of himself or herself, what beliefs he or she holds about stuttering, and what primary and secondary stuttering symptoms he or she displays, what avoidances he or she uses, and what detrimental life choices he or she is making.

**Disputation of irrational beliefs step.** The dissertator believes that the client’s self-talk and belief system is the easiest way to access data stored in the pre-frontal cortex. The client is taught to dispute his or her irrational beliefs verbally at first and then with homework actions. Using massive *in vivo* and imagery homework actions the synapses in the limbic system can be modified to result in more spontaneous fluency. Motivating a client to do massive homework requires that the client needs to cognitively work on his or her irrational ideas that underpin his or her low frustration tolerance.
Chapter VII provides a typical therapy session to help the client to dispute his or her irrational self-talk.

*Overcoming the dire need to be approved step.* All people want to be approved and accepted. This universal, inherited trait was evolved in our species because it was necessary to survive in a “pack”. The people who were not accepted or approved were left behind or expelled from the pack. These people either perished or were not able to pass on their genes. Times have changed and an adult no longer has an absolute need for approval or love from any specific person, let alone from all significant persons in order to exist, although approval, acceptance and love do have some practical advantages. In modern times when approval from others becomes a necessity in the short term, it is detrimental to an individual, especially one who stutters, since it causes him or her to avoid certain activities that might cause short term disapproval, but help with long term goals. Albert Ellis (1997) was especially aware of this in the population in general. The dissertator postulates that it is especially pernicious for those who stutter. Thus, all the tools in the REBT armamentarium need to be applied to minimize this inherited tendency.

*Advertising and voluntary pseudo stuttering step.* Desensitization toward stuttering is a *sine qua non* of gaining spontaneous fluency. The best way to desensitize oneself is to either verbally, or through actions, advertise that you stutter or to use voluntary pseudo stuttering. Only in this way will the client modify his or her brain—especially the limbic system--to create a mindset that there is nothing essentially, intrinsically wrong with an occasional disfluency and not give in to panic in a speaking situation that causes stuttering.
Building a fluency base step. Any activity requires that a right way to perform be practiced until it becomes second nature. For example, a golfer may practice his or her driving or putting skills when not under pressure. A person with CPSS is encouraged to practice speaking in situations where he or she does not stutter. Usually such situations include when a person is alone or talking to a pet. In this step the client is required to massively practice stutter free talking.

Rational-Emotive Imagery (REI) and its applications step. As noted above it is important to change unhealthy negative emotions to healthy negative emotions. REBT uses REI to change unhealthy negative emotions to healthy negative emotions—to change anxiety and panic into mere concern. This technique can be used, for example, to diminish PTSD symptoms that result from having had a few dramatic or continued traumatic experiences due to stuttering.

Managing secondary stuttering symptoms step. In this step three items are addressed: a) involuntary secondary stuttering movements; b) excessive tensing of speech producing muscles, and c) proprioceptive feedback. In each instance the voluntary exaggeration of the specific action is practiced. This provides a means to initiate and monitor involuntary movement, tenseness, and proprioceptive feedback. Sometimes extensive exaggeration is necessary to provide easily attainable monitoring and, hence, control.

Application of adapted mainstream techniques to managing primary stuttering step. Chapter VII includes techniques adapted from conventional therapy with a unique emphasis on the associated cognitive and emotional aspects. These techniques include cancellation of blocks, holding onto a stutter and bubbling out of it, holding onto a stutter
and pulling out of it, easy onsets, using a low vibrant voice, elongation of vowels, and handling on-coming blocks. Although the speech production aspect of these techniques may indeed be the same as in the conventional therapy, the primary goal of these techniques is to change cognition and emotions and the only the secondary goal is to provide for means of managing stuttering. In conventional therapy only goal is to provide means of managing stuttering. If the attitudes and emotions change—as they do in some instances—this is only a serendipitous outcome, something that has not been built into the therapy from the beginning.

*Stabilization and relapse prevention step.* This dissertation provides a new approach to stabilization and relapse prevention consisting of REBT techniques and provides the client with an acronym to remind him or her what to do prophylactically. The client is also advised to keep on desensitizing himself or herself against the classically conditioned speech and danger association that is stored in the limbic system.

*Termination step.* In this step the client is handed over total responsibility for his or her therapy. He or she is also encouraged to join various stuttering support groups and list-servers. The client is reminded, as well, that he or she is welcome back for a refresher session, if necessary.

**Concluding Remarks**

*Evolving Zeitgeist*

Although the prevailing opinion of both SLPs and consumer advocates is that people with CPSS – 20% of those who have ever stuttered —cannot be helped, some of the more psychologically oriented professionals (cf. Manning, 2010) have expressed the view that spontaneous speech is possible for many more stutterers than is currently
believed. Manning (2010) and others believe that counseling and psychological approaches may give hope to this population.

*How the Dissertation Supports the Evolving Paradigm of Resolving CPSS*

In the current environment where Evidence Based Practice (EBP) is in vogue, REBT appears to be a good candidate because it – along with the other cognitive behavior therapies-- can be manualized and tested for effectiveness. This dissertation presents a step-by-step outline of therapy that can be used to develop such a manual.

**Future Directions**

In order to establish REBT as a viable candidate for the treatment of CPSS a manual has to be written based on the treatment described in chapter VII. The sequential treatment steps should serve as the basis for the manual.

After the manual has been written and tested out by therapists and SLPs, a study to evaluate the effectiveness and efficiency of this approach needs to be designed and carried out. If the treatment proves to be effective the manual needs to be made widely available so that both therapists and SLPs can use the manual.
References


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nonstuttering adults. *Journal of Speech, Hearing, and Language Research* (in
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tomography study of short- and long-term treatment effects on functional brain

systems, and epigenetic systems approaches to development. In Cathy Dent-Read
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emotive therapy. In A. Ellis & R. Greiger (Eds.), *Handbook of rational-emotive
therapy* (pp 72-95). New York: Springer.

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Dobson, K. S., Backs-Dermott, B. J. & Dozois, D. J. (2000). Cognitive and cognitive-
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psychological change: Psychotherapy processes & practices for the 21st century
(pp. 409-428). New York: John Wiley & Sons, Inc.


APPENDICES
APPENDIX A

Support/Self-Help Groups around the World
Support/Self-Help Groups around the World (Kuster, 2009c)

Argentina

La Asociacion Argentina de Tartamudez  http://www.aat.org.ar/

Australia

Speak Easy Association  http://www.vicnet.net.au/~ausspeak


Austria

Oesterreichische Selbshilfeinitiative Stottern  http://balthasar.infowerk.co.at/oesis/

Brazil

Brazilian Stuttering Association  http://www.abragagueira.org.br/

Bulgaria

Bulgarian Stuttering Association (SIZ)  http://www.zaekvane-bg.com/

Burkina Faso

Burkina Faso Stuttering Association  http://www.stutterisa.org/BurkinaFaso/

Belgium

Vzw BeSt  http://www.stotteren.be/
Cameroon


Canada

Association des bigues du Canada (ABC)  http://www.webcon.net/~caps/brabci_e.htm

Canadian Stuttering Association  http://www.stutter.ca/

Speak Easy  http://www.speakeasycanada.com/

The British Columbia Association of People who Stutter (BCAPS)
http://www.bcaps.bc.ca/

Other Canadian Organizations  http://www.mnsu.edu/comdis/kuster/
SupportOrganizations/Canada.html#Canadian

Association des jeunes begues du Quebec, for young people who stutter between
the ages of 2 and 25  http://www.ajbq.qc.ca/

China

ISA Chinese website http://www.kouchi.org.cn/

China Stuttering Association  http://www.stutter.cn/

Nanjing Stutter Self-support Association http://www.stutter.cn/nanjing

Shanghai Stuttering Association http://www.stutter.cn/shanghai/liaojiexiehui.htm
Croatia

Hinko Freund - Croatian Association for People Who Stutter  http://www.udruga-hinkofreund.hr/

Czech Republic


Denmark's Association for Stutters in Denmark homepage has information available in the Danish language  http://www.fsd.dk/

Estonia's The Estonian Association of People Who Stutter  http://www.kogelus.ee/

Finland's STAMMÄRFÖRENING rf (FS)

Finnish  http://www.ankytys.fi/

English  http://www.ankytys.fi/english_pages

Swedish  http://www.ankytys.fi/svenska_sidor

France

Association Vaincre le Bégaiement  http://www.soliane.net/avb/

Association Parole-Begaiement - (Speech-Stuttering Association)

http://www.begaiement.org/

Germany's Bundesvereinigung Stotterer-Selbsthilfe e.V., available in the German language  http://www bvss.de/
Links to Self Help Groups in Germany (http://www.muenster.org/s-shm/online20.htm#shg), including:

Stotterer-Selbsthilfegruppe Münster e.V. http://www.muenster.org/s-shm/

Landesverband Stotterer-Selbsthilfe Nordrhein-Westfalen e.V
http://www.muenster.org/s-shm/lv-nrw/

Stotterer-Selbsthilfegruppe Bielefeld e.V. http://www.stotterer-selbsthilfegruppen.de/bielefeld/

Stottern und Stotternde Online http://www.muenster.org/s-shm/stotonli.htm

Stotterer Selbsthilfe e.V. Berlin http://members.aol.com/shgberlin

Holland's Openingspagina van de Stottervereniging Demosthenes
http://www.stotteren.nl/

Hungary's Demoszthenesz http://demoszthenesz.hu/

Iceland's Icelandic Stuttering Association - Malbjorg in Icelandic http://www.stam.is/

India

Indian Stammering Association http://www.indiastammering.com/

Swar Sudhar Society - information at the bottom of the page
http://www.speechtherapyindia.org/ home.html

Ireland - Irish Stammering Association http://www.stammeringireland.ie/
Israel - The Israeli Support Group for People Who Stutter (http://www.ambi.org.il/) has information in Hebrew and English http://www.ambi.org.il/english001.html

Italy - Associazione Italiana per la Balbuzie e la Comunicazione http://www.balbuzie.it/

Japan's Japan Stuttering Homepage by the Japan Stuttering Project http://www.bekkoame.ne.jp/i/chioaki/

Latvian Stuttering Association (best accessed with Internet Explorer) http://www.latvs.org/

Nepal's Nepal Stutters Association http://www.stutterisa.org/nepal/

New Zealand's Speakeasy Association http://www.shopzone.co.nz/speakeasy/


Norway's Norsk Intersetseforening for Stamme http://www.stamming.no/

Scotland - Safety in Stumblers, a support group in Glasgow http://www.safetyinstumblers.org.uk/

Pakistan Stammering Association http://www.pakistanstammering.org/

Scotland - BSA Scotland http://www.stammering.org/scotland/index.html

South Africa's Speakeasy Stuttering Association http://www.speakeasy.org.za/

Spain's Funadcion:Asociacion Española de la Tartamudez http://www.ttm-espana.com/
Sweden

Sveriges Stamningsföreningars Riksförbund http://www.stamning.se/

Self-Help-group for Stutterers, a local chapter in Stockholm
http://www.algonet.se/~ssf

Switzerland - Stottern in Zuerich a self-help group for people who stutter in Zurich, Switzerland (the list is in the German language) http://home.tiscali.ch/stottern

Turkish Stuttering Association http://www.kekemelik.web.tr/

United Kingdom

British Stammering Association http://www.stammering.org/

BSA: Scotland http://www.stammering.org/scotland

United States

Friends: The Association of Young People Who Stutter
http://www.friendswhostutter.org/

The National Stuttering Association (NSA) USA http://www.nsastutter.org/

Overview and Brief History of the National Stuttering Association by Michael Sugarman, a paper written for the International Stuttering Awareness Day Online Conference, Oct. 1-22, 1999
http://www.mnsu.edu/dept/comdis/isad2/papers/sugarman2.html

Dallas Chapter http://www.geocities.com/dallasnsa/
South Central Minnesota  http://www.mnsu.edu/dept/comdis/depthp/nsamankato.html

New York City Area  http://www.geocities.com/HotSprings/Spa/2043/

Philadelphia Chapter  http://members.aol.com/WDParry/philansp.htm


Stuttering Foundation of America - USA  http://www.stuttersfa.org/

Phone: 1/800-992-9392

e-mail: stutter@vantek.net


Other Fluency Disorders Support Organizations

European League of Stuttering Associations http://www.stuttering.ws/

International Stuttering Association http://www.stutterisa.org/

International Fluency Association  http://www.theifa.org/

Other Organizations - by country  http://www.mnsu.edu/comdis/kuster/SupportOrganizations/International.html
Passing Twice - an organization for gay and lesbian people who stutter
http://www.passingtwice.com/

ASHA's Special Interest Division #4, Fluency and Fluency Disorders
http://www.asha.org/about/membership-certification/divs/div_4.htm

International Cluttering Association http://associations.missouristate.edu/ICA

APPENDIX B

Homepages about Stuttering
Organization Home Pages (Kuster, 2009b)

Stuttering Foundation of America  http://www.stuttersfa.org/

National Stuttering Association  http://www.westutter.org/

Home Page of the Canadian Association for People who Stutter  http://webcon.net/~caps

Understanding Stuttering from the MSNBC WEB site  http://www.msnbc.com/onair/nbc/dateline/stutter/default.asp

East Carolina University's Stuttering Page http://www.ecu.edu/csd/Stutt.html

Student class project University of Minnesota-Duluth  http://www.d.umn.edu/~cspiller/stutteringpage/stuttindex.html


University of Nebraska Fluency Center  http://www.unl.edu/fluency/

Stuttering from Discoveryhealth.com
http://www.discoveryhealth.com/DH/ihtIH/WSDSC000/ 20722/24656.html

Stuttering Center of Western Pennsylvania  http://www.pitt.edu/~commsci/stuttering_center/scwp_home.htm

Disorders of Fluency SIG website, created by a group of UK Speech & Language Therapists interested in sharing information about fluency disorders
http://www.fluencysig.org.uk/
The Association for Research into Stammering in Childhood
http://www.stammeringcentre.org/

The Australian Stuttering Research Centre http://www.fhs.usyd.edu.au/asrc/

Home Pages maintained by people who stutter and others interested in stuttering.

Although there is a lot of very valuable information on several of these sites maintained by both professionals in speech-language pathology and others, the Stuttering Home Page takes no responsibility for the accuracy or efficacy of the information provided by others.

Stuttering-Answers contains information about World Stuttering Treatment, Stuttering Support, Stuttering Help and Stuttering Advice information http://www.stuttering-answers.com/

Africa Stuttering by Guy Cedric Mbouopda http://africastuttering.org/

Página dedicada a la tartamudez by Amparo Cabrera http://www.uv.es/tartamudez

Anita Blom's Stuttering Page - in Swedish http://w1.511.telia.com/~u51106628/

Mario D'hont from Ghent, Belgium - in both English and Dutch http://user.online.be/~gd33907/index.htm

David's Stuttering (http://www.accent.net/dblock/stut.htm) a web document by David Block

Eric Bourland's "Guerrilla Stutterer." http://ebwebwork.com/stutter/

Bobby Childers Stuttering Links and material http://www.nettak.com/bobby/Stuttering_links.htm
Darrell M. Dodge The Veils of Stuttering: essays on stuttering therapy and etiology
http://www.telosnet.com/dmdodge/veils

Bill Fabian's MP3 Audio and Links Site has information related to stuttering
http://www.angelfire.com/ok/stutt2/index.html

Gloria's home page http://www.geocities.com/kglo51

Richard Harkness page about neuropatterning http://members.aol.com/rharkn

Imaging Studies Make A Case For The Brain Basis Of Stuttering http://www.mnsu.edu/comdis/kuster/harkness1.html

Stuttering's Primary Paradox And How It Tricks Us http://www.mnsu.edu/comdis/kuster/harkness2.html

Russ Hick's Home page http://www.geocities.com/Heartland/Hills/4440/


Gerald Johnson Library http://www.mnsu.edu/comdis/kuster/gjohnson/gjohnson.html

Thomas David Kehoe http://www.casafuturatech.com/


Cliff Leong http://wearx.com/stutfu/

Bill Parry's Stuttering Links http://members.aol.com/wdparry/
Robert Quesal  http://www.wiu.edu/users/mfrwq/home.html

Peter Reitzes  http://www.stutterny.com/home.html

Chris Roach http://members.aol.com/cjroach/CJRoachSpecial.html

David Rose's home page http://www.david-rose.net/index.html


David Scarbourgh's Home Page  http://www.geocities.com/Heartland/Acres/3564/

Elocutionary by Greg Snyder  http://www.elocutionary.com/

Allan Tyrer  http://www.atyrer.demon.co.uk/stammer/index.htm

The Development of Confident Speech by Noel Trimming
http://noeltrimming.members.beeb.net/yyy.htm

Carlos A. Vegh's Stuttering: Theory (or lack thereof) and Practice (lots of it)
http://vegh.sscnet.ucla.edu/Stuttering.htm

Stuttering Prevention by Tony Wray  http://www.prevent-stuttering.ca/

Batalos by David http://www.geocities.com/batalosweb/index.htm

APPENDIX C

Discussion Forums
Discussion Forums (Kuster, 2009a)

Discussion forums are groups that you subscribe to. There is no fee to subscribe. At present, several forums are dedicated to the topic of stuttering. When you subscribe to a discussion forum, you will join a group of people interested in stuttering who ask and answer questions, offer suggestions, discuss issues, evaluate therapy programs, etc.

Subscribing to a list assumes that you will follow the certain rules of Netiquette (http://www.screen.com/understand/Netiquette.html) as well as the general rules posted by the list owner. After you subscribe to a listserv, you will receive any message sent to that address. You can read them and reply to them (if you choose to), either replying to the entire group of subscribers, or to the individual who posted the message. It is important to remember that if you send a message to listserv@rest.of.address, you are talking to a computer. You write to the computer to subscribe to the group, to review who else is subscribed, to check the archives, to signoff, etc. When you send an email message to the stutt-lists@rest.of.address described below (stut-hlp, stutt-l, stutt-x, sid4, stot-ml, wordfree) you are sending a message to everyone subscribed to that list - probably close to 300 people. You can also search the archives (http://www.mnsu.edu/comdis/kuster/Internet/archives.html) to find past discussions.

Before you ask questions on mailing lists, you will find that

- Lou Heite's information on Posting Questions on Discussion Forums (http://www.mnsu.edu/comdis/kuster/Internet/askingquestions.html) is very helpful.

- Special Interest Division 4, Fluency and Fluency Disorders email list.
To join the list, send an e-mail to asha-div4-request@lists.asha.org. In the subject line write **Subscribe Full Name ASHA account number** (if you have that available). Leave the body of the message blank.

Examples:

Subscribe John Smith 0005556

Subscribe John Smith

You will receive confirmation after we have confirmed your membership status along with a welcome message that will include further information about this list. If you have any technical difficulties subscribing, posting messages, or receiving them, please send an e-mail to ListAdmin@asha.org

☐ **STUTT-L@LISTSERV.Temple.EDU** is a forum for the discussion of stuttering. There is a very helpful Frequently Asked Questions (http://www.mnsu.edu/comdis/kuster/stuttfaq.html) about this list, including subscription information. Or you can use the following information - to subscribe, send the following message to listserv@listserv.temple.edu **subscribe Stutt-L firstname lastname**. The list owner is Russ Hicks. Instructions for leaving the list (http://www.mnsu.edu/comdis/kuster/Internet/instructions/leaving.html) are available. Some of the archives (former postings) for Stutt-L are also available at List archives at LISTSERV.Temple.EDU (http://listserv.temple.edu/archives/stutt-l.html).

☐ **STUTT-X@ASU.EDU** is a forum for the discussion about research of communication disorders, fluency disorders in particular. To subscribe, send the following message to listserv@asu.edu **subscribe Stutt-X firstname lastname**. The list owner is Donald
Mowrer. Step by step instructions on how to subscribe to Stutt-X (http://www.mnsu.edu/comdis/kuster/Internet/instructions/subx.html) by Lou Heite. Instructions for leaving the list (http://www.mnsu.edu/comdis/kuster/Internet/instructions/leaving.html) are also available.

• BVSS-LIST@BVSS.DE is a German-language list sponsored by the German Stuttering Association (Bundesvereinigung Stotterer-Selbsthilfe), for all people who are interested in stuttering. To subscribe send an empty email to bvss-list-request@bvss.de and type subscribe bvss-list in the subject line. Or you can use this website (http://www.bvss.de/mailingliste/) to subscribe. The list administrator is Ulrich Natke - ulrich@natke.info

• WORDFREE@LISTSERV.TEMPLE.EDU is a mailing list for young person who stutter. Anyone who stutters and is old enough to use email on a computer but younger than age 20 is welcome. To join send the following message to listserv@listserv.temple.edu sub wordfree firstname lastname.

• CAPS-NEWS@WEBCON.NET is a mailing list used for open discussion of any aspect of the Canadian Association of People who Stutter (CAPS) organization or of stuttering in general. To subscribe address e-mail to caps-news-request@webcon.net, and type subscribe in the subject line as well as the body. The list maintainer is David Block.

• STAM-L is a mailing list on stuttering for people speaking Swedish, Norwegian or Danish (these are closely related Scandinavian languages). STAM-L is owned by the Swedish stuttering association ("Sveriges Stammningsfreningars Riksfrbund") The administrator is Gustaf Liljegren. For subscription information check http://www.stamning.se/lista/
ELSA.EUROPE@TELIA.COM is a mailing list in conjunction with the European Year of People with Disabilities (EYPD 2003). ELSA is providing a discussion forum as an opportunity for everybody interested in stuttering to contribute to raising the awareness of stuttering Europewide. During the Year they will provide information, and the opportunity to contribute to raising the awareness of stuttering either through various national stuttering associations, ELSA, the EDF and a public relations company funded by the European Commission to promote the Year. To subscribe, email elsa.europe@telia.com the following message: EYPD Subscribe

There are several lists and chat forums about stuttering that have been formed on yahoogroups.com that may be of interest to some individuals. Those I know about are listed below. You can subscribe by either using the subscription format on the web addresses provided below or by emailing nameoflist-subscribe@yahoogroups.com.

NSACHAP@yahoogroups.com is a closed mailing list for leaders of National Stutter Association chapters.

NSA-Kids@yahoogroups.com is a closed mailing list for children who stutter, ages 8-12, and are members of the NSA

NSA-Teens@yahoogroups.com is a closed mailing list for adolescents who stutter, ages 13-20, and are members of the NSA

NSA-Parents@yahoogroups.com is a closed mailing list for parents of children or teens who stutter, and are members of the NSA
*Stutter_Less_With_REBT@yahoogroups.com is a closed mailing list for those who are interested in helping themselves to have more spontaneous fluency using REBT (*not found on Kuster (2009))

Parents-W (http://www.yahoogroups.com/group/Parents-W) is a mailing list for parents concerned about stuttering behaviors in children. Professionals, students, and others interested are also welcome to join. The list owner is Larry Burd at larry_burd@compuserve.com

TTM-L (http://yahoogroups.com/community/ttm-l) is a mailing list on stuttering in the Spanish language. The moderator is Pedro R. Rodriguez C. (rodrigup@camelot.rect.ucv.ve), Institute of Psychology, Central University of Venezuela.

Midwest stutterers (http://www.yahoogroups.com/group/stuttering_midwest) -- for people who stutter in the Midwest

Stuttering Chat (http://groups.yahoo.com/group/stutteringchat) - for people who stutter and speech professionals.


Stuttering (http://www.yahoogroups.com/group/stuttering) - is a support eGroup for persons affected by stuttering, family, medical professionals and any interested individuals wish to share information and/or support for affected persons.

NY Metro area stuttering e-group (http://www.yahoogroups.com/group/nystuttering) - is restricted to NY area stutterers
Stutterers (http://www.yahoogroups.com/group/stutterers) - stutterers of the world unite

stut-FR (http://www.yahoogroups.com/group/stut-FR) is "a public group for the
discussion of the McGuire Programme (Freedoms Road).

Stutter (http://www.yahoogroups.com/group/stutter) is described as "a place for stutterers
to talk and express themselves and maybe share some wisdom and insight."

SLPsWhoStutter (http://www.yahoogroups.com/group/SLPsWhoStutter) is a list "to
provide a private forum for Speech-Language Pathology students who stutter and
practicing SLPs to lend mutual support, share experiences and ideas, and find solutions."

stutterersinfilm (http://groups.yahoo.com/group/stutterersinfilm) is a mailing list to
discuss film and television portrayals of stutterers. The list moderator is Ira Zimmerman

IndianPWS (http://groups.yahoo.com/group/IndianPWS) is a mailing list for persons
from India to share thoughts , feelings, and anything related to stuttering.

SLPsStuttering (http://groups.yahoo.com/group/SLPsStuttering) is a mailing list for speech-
language pathologists having questions about stuttering. The list owner is Andy Floyd.

WomenLivingWithStuttering (http://groups.yahoo.com/group/WomenLivingWithStuttering)
- This International Community will provide support for women living with stuttering.
Females who stutter deal with a unique set of issues often overlooked or not addressed by
the stuttering community because stuttering affects a much larger percentage of men than
women. Through this group female's voices will be heard about what their specific needs
are and what the stuttering community can do to best support them. This group has been
created to provide a safe and secure atmosphere where female's can communicate about
core life decisions and issues about home, work, family and relationships by sharing and seeking advice from other women.

LidcombeUSA (http://groups.yahoo.com/group/LidcombeUSA) is a mailing list created to discuss The Lidcombe Program, a stuttering therapy technique developed in Australia by Mark Onslow, Ph.D.

Covert-S (http://groups.yahoo.com/group/Covert-S/join) is a closed forum for covert PWS to share their experiences, go for guidance and offer other covert PWS support to allow ourselves to try and come to peace with ourselves as PWS. Covert means 'hidden' - to hide one's stuttering by avoiding words/situations, rephrasing, word substitutions, etc. to come across as a fluent person.

Cluttering (http://groups.yahoo.com/group/cluttering/) is an open group for people who have a fluency disorder that is often confused with stuttering, called Cluttering.

Speaking From The Heart (http://uk.groups.yahoo.com/group/speakingfromtheheart/) - online self-help group for adults who stammer.

Parentssupportlidcombe (http://groups.yahoo.com/group/Parentssupportlidcombe) is a group for parents of children who stutter to share their experiences regarding the Lidcombe program.