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Applying cognitive behavioral therapy (CBT) components to stuttering treatment with an adolescent
- a case study

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SAMMANFATTNING

Bakgrund: Studier har visat att höga nivåer av social oro är vanligt förekommande bland tonåringar och vuxna som stammar, samt att förekomsten av social oro predicerar en sämre respons på logopedisk stamningsbehandling. Sedan en längre tid har social oro framgångsrikt behandlats med kognitiv beteendeterapi (KBT) och denna terapiform har på senare tid visat sig ha en god potential även vad gäller behandling av stamningsrelaterad social oro bland vuxna.

Syfte: Syftet med denna uppsats är att illustrera hur ett kognitivt förhållningssätt kan inkorporeras inom stamningsbehandling med en tonåring, samt att undersöka om patienten blev hjälpt av interventionen.

Metod: Ett kognitivt förhållningssätt användes i stamningsbehandlingen av en 15-årig kille som sökt logopedisk hjälp. Åtta inspelade behandlingssessioner, som senare transkriberades och analyserades, ett skrivblock som användes under hela terapins gång, samt ett flertal utvärderingsmaterial som administerades före, under och efter behandlingen utgör det material som använts i studien.

Resultat: Denna uppsats beskriver hur patienten svarade på interventionen, presenterar behandlingens huvudteman och struktur, samt ger exempel på hur komponenter från KBT inkorporerades inom den logopediska stamningsbehandlingen. Resultaten från utvärderingsmaterialen visar att patienten blev hjälpt av behandlingen.

Slutsats: Ett kognitivt förhållningssätt kan med gott resultat användas inom logopedisk stamningsbehandling av tonåringar.

Sökord: stamning, tonåringar, oro, behandling, kognitiv beteendeterapi (KBT)

ABSTRACT

Background: Studies show that many adolescents and adults who stutter show higher than normal levels of social anxiety, and that the presence of anxiety increases the risk for poor responses to standard stuttering treatments. Recent research points towards the successful treatment of social anxiety and social phobia in adults who stutter through cognitive behavioral therapy (CBT) and calls on speech-language pathologists to incorporate CBT components within their treatment of adults who stutter

Purpose: The aim of this paper is to illustrate how CBT principles were applied to stuttering therapy with an adolescent and to examine whether the client found the treatment helpful.

Method: CBT concepts and strategies were applied to stuttering therapy with a 15-year old male seeking speech-language pathology intervention. Eight recorded treatment sessions, which were later transcribed and analyzed, a notebook used during the therapy, and various evaluation measures completed before, during, and after the treatment constitute the material used within the study.

Results: The case presentation describes the client's response to the therapy, presents the main themes and structure of the therapy, and provides examples of CBT and speech-language pathology interventions implemented during the course of the treatment. The results gathered from the various evaluation measures are presented and indicate that the client was helped by the therapy.

Conclusion: The principles of CBT can be successfully incorporated within speech-language pathology intervention with adolescents who stutter.

Key words: stuttering, adolescents, anxiety, treatment, cognitive behavioral therapy (CBT)

CONTENTS

1 INTRODUCTION

Stuttering is a multifactoral disorder which often correlates with higher than normal levels of social anxiety in adults and adolescents. There is evidence that high levels of social anxiety make adults who stutter less responsive to speech restructuring programs (Guitar & Bass, 1978), and it has long been recognized that additional anxiety reduction treatment is needed when anxiety is suspected of having a negative impact on stuttering behaviors. Cognitive behavioral therapy (CBT) has proved to be a promising treatment method for social anxiety among adults who stutter, and this study aims to expand our present knowledge of the field by evaluating the effectiveness of incorporating CBT principles within stuttering therapy with an adolescent.
Despite evidence that adolescents who stutter often experience high levels of social anxiety, and even though speech-language pathologists often prove unwilling or unable to explore negative thoughts and feelings with this group (Watson, 1995), the implementation of CBT with adolescents who stutter has not yet been a subject for thorough research,. Through a detailed case presentation illustrating how the principles of CBT may be incorporated within stuttering treatment, the author of this paper aims to inspire other speech-language pathologists to add CBT components to their own therapeutic "toolboxes" and hopes that the CBT perspective will provide those who find it difficult to address the psychological aspects of stuttering with the tools to do so.

2 BACKGROUND

2.1 Stuttering

Stuttering is a mystery that has driven those who suffer from it to depths of frustration and despair for hundreds of years. In the ruins of the biblical town of Beth Shemish archeologists found a clay tablet that read: "Oh God! Cut through the backbone of my stuttering. I desire that thou shalt remove the spring of the impediment" (Van Riper, 1964: 306), a prayer that has been echoed by people from all parts of the world ever since. One of the most fascinating aspects of stuttering is the complex way in which varying factors, such as genetic predisposition, personality and environment, combine to cause and sustain the disorder, thereby causing the wide array of symptoms experienced by individuals who stutter (Guitar, 2006).

2.1.1 Symptoms of stuttering

The various symptoms of stuttering can be divided into core stuttering symptoms and secondary stuttering symptoms. *Core stuttering symptoms* are characterized by an abnormally high frequency and/or duration of repetitions, blockages or prolongations in the forward flow of speech, whereas *secondary stuttering symptoms* may be divided into four distinct categories: cognitive, emotional, physiological and behavioral (Guitar, 2006). It is important to note that the secondary symptoms developed by an individual are not necessarily proportional to the severity of his/her core stuttering symptoms. As a result, it is not uncommon for a person with very mild core symptoms to develop extensive secondary behaviors, or vice versa (Blood, Blood, Maloney, Meyer, Qualls, 2007; Mulcahy, Hennessey, Beilby & Byrnes, 2008). In order to gain a complete understanding for the problems that stuttering causes an individual it is therefore important to carefully examine *both* aspects of the disorder. As this study is primarily concerned with secondary stuttering behaviors, common examples of cognitive, emotional, physiological and behavioral symptoms that may accompany the core disorder are presented below. The core stuttering symptoms will however not be further explained or exemplified in this paper.

Cognitive symptoms of stuttering
All-or-nothing thinking: Everything is seen as either right or wrong with no shades of grey in between. The person who stutters considers his own speech to be defect whereas everyone else has perfect speech (Kåver, 2006).
Self-focus: All attention is centered on oneself, or on a certain aspect of oneself. The person who stutters places all focus on his/her speech, thereby neglecting other important aspects of communication, such as pragmatics, language, and content (Van Riper, 1964).
Post-mortem attention: Much time is spent dwelling on the past. The person who stutters constantly looks back on his/her utterances in order to examine their acceptability (Kåver, 2006).

Emotional symptoms of stuttering
Helplessness: Feelings of helplessness are an often recurring theme among those who stutter. These emotions tend to produce escape and avoidance behaviors, as these are the coping strategies favored by those who believe that what they endure is beyond their control (Plexico, Manning & Levitt, 2009).
Fear: Not knowing when stuttering will occur or whether it will be possible to hide when it does, easily leads to generalized fears as well as to specific fears about sounds, words and/or situations (Watson, 1995).
Shame and guilt: The common belief among people who stutter that "there is something wrong with me", and the idea that this fault has to be hidden, creates a fertile breeding ground for shame. Shame is then often complemented by feelings of guilt for causing conversation partners discomfort and for taking up too much of their time (Guitar, 2006; Van Riper, 1964).

Physiological symptoms of stuttering
The physiological symptoms that someone may endure when stuttering, or when expecting to stutter, are a reflection of the stress experienced by that person and is no different from the way our bodies react when we are scared, anxious or embarrassed. A few examples of such reactions are: Muscular tension, sweating, trembling, palpitation and blushing (Van Riper, 1964).

Behavioral symptoms of stuttering
Escape behaviors: Escape behaviors occur when a person attempts to terminate a stutter while still finishing the word. Common examples of escape behaviors are: Loss of eye-contact, eye-blinks, head-nods, movement of arms or legs and interjections of extra sounds or words. When first used these behaviors tend to immediately terminate the stutter and they are therefore reinforced until they become a habit. However, over time the effectiveness of escape behaviors tend to diminish until they are sustained only by the power of habit (Van Riper, 1964).
Avoidance behaviors: People who stutter generally learn a wide array of avoidance behaviors in order to avoid feared sounds, words or situations. Such behaviors may entail changing words, avoiding situations and speaking only when necessary (Guitar, 2006, Van Riper, 1964).

2.1.2 Stuttering treatment
Historically stuttering treatment has been divided into two broad categories: fluency-shaping therapy and stuttering modification therapy. Today however, it is becoming increasingly common for speech-language pathologists to combine elements from both fluency-shaping and stuttering modification treatments in a form of therapy known as the integrated approach (Guitar, 2006).

The focus of *fluency-shaping therapy* is to increase fluency. This goal may be accomplished through use of reinforcements and mild punishments, by manipulating speech in various ways, such as speaking slowly and stretching out sounds, or by focusing on articulation and breathing

(Guitar, 2006). The aim of fluency shaping therapy is for the individual to speak fluently, either without effort, or when concentrating on certain aspects of his/her speech. As the focus of fluency-shaping therapy is on reducing the quantity of the stutter, it is most commonly evaluated by measuring percent syllables stuttered (%SS) before and after treatment (Guitar & Peters, 1985).

Within *stuttering modification therapy* the focus is on changing the quality of the stutter, usually by changing long and tense stutters into increasingly brief and relaxed ones. Unlike fluency-shaping therapy much time is also spent on reducing negative emotions and escape and avoidance behaviors (Guitar, 2006). The overall aim of stuttering modification therapy is either for the individual to speak fluently without effort, or to stutter in fashion that he/she feels comfortable with and which does not cause negative emotions. When stuttering modification therapy is evaluated the rate and quality of the stutter, as well as the feelings it elicits in the individual, are all taken into account (Guitar & Peters, 1985).

The integrated approach combines elements from the fluency shaping and the stuttering modification therapies with the aim of creating a truly individualized therapy. Factors such as the individual's age, his/her therapy goals, the severity and dynamics of the stuttering symptoms and other key characteristics are all taken into account when designing the therapy (Guitar, 2006).

2.2 Adolescence

The idea that a distinct period exists when one is no longer a child, but not yet an adult is by no means a new one. Ancient philosophers such as Plato and Aristotle wrote about the dangers of youthful passions and impulses and the need to keep them under control as early as 300 B.C. However, our current notion of adolescence defines it as a time of promise as well as peril, a notion that Jean-Jacques Rousseau was among the first to express in 1762 (Berger, 1998). His belief that biological maturation leads to higher psychological processes like self-consciousness and logical reasoning as well as to emotional conflict and instability has been highly influential on our current understanding of the concept of adolescence (Cole, Cole & Lightfoot, 2005).

Today the word adolescence is used to describe a phase of transition between childhood and adulthood defined by major physical transformations, intellectual and emotional growth, and an increased level of independence (Rustin, Cook & Spence, 1995). The length of the period defined as adolescence varies greatly from one society to the next, but in the United States and other industrialized countries a period of seven to nine years usually separates the onset of puberty from the age at which a person is allowed to make certain decisions which convey adult status, such as joining the army or marrying without parental consent (Cole et al., 2005).

The four theories that have been most influential within the field of developmental psychology are (1) the psychoanalytic theory which originated with the works of Sigmund Freud, (2) the learning theory, highly influenced by B.F Skinner, (3) the cognitive theory pioneered by Jean Piaget and (4) the socio-cultural theory with Lev Vygotsky as its major proponent. Whereas the learning theory and the socio-cultural theory consider development to be a gradual and continuous process the psychoanalytical and the cognitive theory view development as a succession of stages (Berger, 1998; Cole et al., 2005). Based on the important role the cognitive developmental theory plays within cognitive behavioral therapy (CBT), and on the fact that the theory highlights several important changes that occur during adolescence, the following section will focus on the teachings of Jean Piaget and the developmental changes he viewed as unique to adolescence.

2.2.1 The cognitive developmental theory

Piaget's theory divides our intellectual development into four stages: sensimotor (0-2 years), preoperational (2-7 years), concrete operational (7-11 years) and formal operational (11-16 years). Piaget considered maturation, experience and social interaction to be fundamental factors for development, but claimed that these factors alone fail to explain how and why a person moves from one developmental stage to the next. He therefore introduced a forth factor, *self-regulation*, which he described as "a series of active compensations on the part of the subject in response to external disturbances" (Piaget & Inhelder, 1966: 157). In other words, development is driven by a person's need and ability to adapt to the environment (Jerlang et al., 2007). When a child faces novel experiences that do not fit with his/her understanding of the world the initial result is frustration, which gradually leads to cognitive growth and to the formation of a new and more complete understanding of the world: The child has now passed from one developmental stage to another (Berger, 1998). Piaget believed that cognitions and emotions are intimately connected and codependent. He saw emotions as the driving force behind the intellect, giving energy to all actions, whereas the intellect is needed in order to understand the deeper meaning of emotions (Jerlang et al., 2007).

2.2.2 Adolescence according to Piaget

According to the cognitive developmental theory the most important cognitive change that takes place during the stage of formal operations is the ability to think hypothetically and abstractly. This ability enables the adolescent to think about thinking, and to speculate about possibilities as well as about reality. Besides allowing the adolescent to solve complex problems this new ability prepares him/her for another similar shift of focus: From the present towards the future (Piaget & Inhelder, 1966). An additional characteristic of the stage of formal operations is that adolescents' thoughts become increasingly flexible, allowing them to deal with problems in many ways and to see things from different perspectives. Piaget believed adolescents' cognitive structures to be fully formed around the age of sixteen, resulting in a high level of equilibrium and the ability to handle most, if not all, of the complexities of logical reasoning (Ginsburg & Opper, 1969).

The development of abstract thought significantly increases adolescents' capacity to take other people's thoughts and beliefs into account. However, due to a cognitive distortion known as *egocentrism* they often fail to differentiate between the objects towards which other people's attention is directed, and those which are the focus of their own concern. Because of the physical transformation experienced by adolescents their attention is primarily directed inwards, and egocentrism therefore leads them to believe that others are as obsessed with their behavior and appearance as they are themselves (Elkind, 1970). One common consequence of egocentrism is the construction of *an imaginary audience*, meaning that the adolescent sees himself/herself as the center of attention in all social situations, resulting in a high level of self-consciousness. According to Piaget egocentrism tends to diminish around the age of sixteen (Berger, 1998). Naturally the idea that one is always the center of attention has important emotional consequences. When adolescents' are critical of themselves they anticipate their imaginary audience to be critical as well, resulting in a higher level of distress that the situation actually warrants and creating feelings of shame and embarrassment (Elkind, 1970). On the other hand adolescents' proneness to self-admiration may also be projected onto the imaginary audience, consequently inflating their feeling of all-importance (Berger, 1998).

2.2.3 Critique of the cognitive developmental theory

The major complaint made by psychodynamic theorists has been that Piaget underestimates the importance of emotions in human development and that he fails to offer any concrete examples

of how thoughts and feelings interact (Jerlang et al., 2007). Vygotsky and other socio-cultural theorists, on the other hand, have criticized Piaget for failing to examine the influence of varying socio-cultural settings on childhood development, as his theory is based solely on observations of children from middle class families in Geneva (Berger, 1998). Another, more generally shared critique, is that of the assumed universality of Piaget's developmental stages. Piaget's belief that the height of intellectual development occurs around the age of sixteen has been called into question by researchers claiming that novel experiences allow our cognitive development to continue throughout adulthood (Jerlang et al., 2007). Studies have also shown that Piaget grossly underestimated the intelligence of infants and preschoolers (Berger, 1998).

2.2.4 The stuttering adolescent

Although a child may start to stutter at any time during childhood up to the beginning of puberty, the norm is for stuttering onset to occur between the ages of two and five, indicating that most adolescents who stutter have had to cope with the disorder for as long as they can remember. By the time they reach adolescence the feelings of frustration often experienced by younger children who stutter will typically have progressed to include problems such as embarrassment, anxiety and social avoidance. Adolescents who stutter generally show significantly higher levels of anxiety than non-stuttering adolescents, regardless of the severity of their core stuttering symptoms and many react to their anxiety by constructing a system of complex escape and avoidance behaviors which becomes increasingly automated over time (Blood et al., 2007; Mulcahy et al., 2008). Adolescents' proneness to compare and compete with each other, and the way stuttering interferes with social and academic advances, often leads to self-criticism and lower self-esteem among those who stutter (Lundberg, 1999). Adolescents' heightened concern for their future also leaves those who stutter vulnerable, as they are likely to project their present problems onto the future and worry that stuttering will limit their chances of finding a mate or holding a job. As a result of egocentrism, adolescents who stutter also tend to project their own negative thoughts and feelings about their stutter onto those around them, creating a distorted conviction that others are impatient with, or even disgusted by, their stutter (Guitar, 2006). All of these factors combined paint a rather grim picture of the challenges facing adolescents who stutter and it is perhaps not surprising that the risk of decreased quality of life as a consequence of stuttering increases as children grow older (Guitar, 2010).

By the time a disfluent child reaches adolescence the risk that he/she is experiencing a chronic disorder has increased significantly. Since the chances of a spontaneous or therapy induced recovery are increasingly slim, it is important that therapy goals and strategies be aimed at finding a way for the adolescent to feel comfortable with the way he/she stutters, rather than solely focused on attaining normal fluency (Cooper & Cooper, 1995). Unfortunately there has been a lack of research concerning stuttering treatment for adolescents, and many speech-language pathologist seem to have reached the conclusion that treating adolescents who stutter is simply too difficult. When adolescents *do* receive therapy it has usually been designed for adults (Guitar, 2010). However, there are several important differences between adults and adolescents which need to be considered when determining whether a treatment designed for adults can also be implemented with adolescents. Presented below are a few examples of such differences.

Motivation and social autonomy: Whereas one can assume that adults come to therapy out of their own free will this is not always the case with adolescents, as they typically experience a lower level of social autonomy. Needless to say, adolescents who choose to come to therapy are likely to be more motivated than those who come against their will (Friedberg & McClure, 2002).

Interests and capabilities: Sitting in a chair facing an adult and talking about personal problems

may feel foreign and unsettling to adolescents who are not used to this form of setting and whose interests may be vastly different from those of adults. Neither are all adolescents able to handle the intellectual and emotional demands of a therapy designed for adults (Lundberg, 1999).
Fear of embarrassment: Due to their proneness towards egocentrism adolescents' generally fear embarrassment more than adults do, and their notion of what is potentially embarrassing may also be inflated compared to adults'. For this reason adolescents sometimes prove unwilling to try interventions which work well for most adults (Rustin et al., 1995).

2.3 Cognitive Behavioral Therapy (CBT)

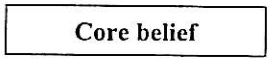
The historical roots of cognitive behavioral therapy (CBT) date back to 1956 when Aaron Beck found that the psychodynamic view on depression was not consistent with his own clinical experiences (Alford & Beck, 1997). During the 1960:s CBT developed as a form of contrast to the psychodynamic therapy which had long dominated the field of psychotherapy, integrating ideas and techniques from the cognitive and behavioral schools of therapy into a structured, short-term and present-oriented psychotherapy for depression. Since then the therapy has been successfully adapted to various populations and psychiatric disorders (Henin, Warman & Kendall, 2002).

2.3.1 The cognitive model

Within CBT thoughts are considered the bearers of emotions and actions. Every individual interprets reality in his/her own unique way and these thoughts and interpretations in their turn shape our feelings and behaviors (Kåver, 2006). Aaron Beck divided our thoughts into a hierarchy with three different layers:

1) *Core beliefs (*also known *schemata*) form the inner level of the hierarchy. Core beliefs develop early in life, become reinforced over time, and are usually more or less consolidated by adolescence and adulthood (Friedberg & MacClure, 2002). Core beliefs form the least conscious of our cognitive processes and profoundly affect the way we perceive ourselves and our environment. In order to maintain our cognitive balance our experiences are continuously filtered and distorted so that these core beliefs, our absolute truths, may remain intact (Kåver, 2006).
2) *Intermediate beliefs, rules and assumptions* make up the second layer of the hierarchy. These are based on how we have learned to interpret various situations and are highly influenced by our core beliefs (Beck, 1995).
3) *Automatic thoughts* form the surface layer of the hierarchy and are relatively easy to identify. They are fast, spontaneous thoughts or images that reflect our deeper cognitive layers, so that a person's schemata, beliefs, rules, and assumptions all dictate the shape these fleeting thoughts will take (Friedberg & MacClure, 2002).

Automatic thoughts in their turn affect our emotions. Whereas negative automatic thoughts result in feelings of sadness, anger, anxiety or hopelessness, positive thoughts lead to feelings of happiness, confidence and contentment. Proceeding one step further automatic thoughts and emotions often lead to a physiological response, and all of these aspects in their turn influence our behavior (Kåver, 2006; Beck, 1995). Beck (1995) illustrates the cognitive model through the example of someone reading a book (see figure 1.)



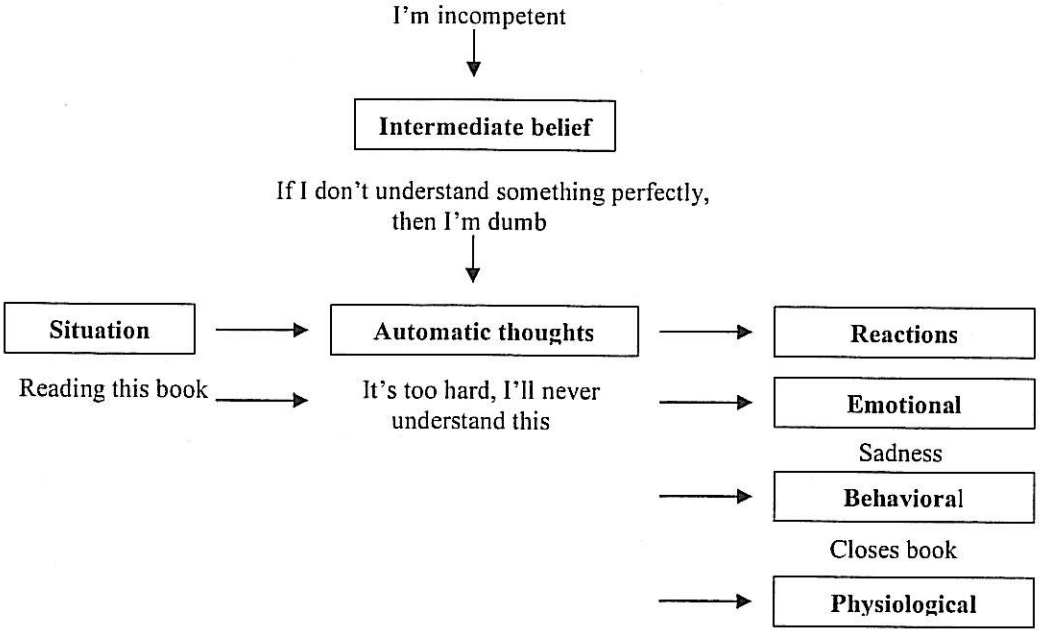


Figure 1. The cognitive model

The figure illustrates how a person's core belief that he/she is incompetent influences his/her intermediate beliefs, which in their turn cause the person to make a negative interpretation of a certain situation (reading a book). The automatic thoughts stemming from this interpretation then cause a number of negative emotional, behavioral and physiological reactions. However, the reader should be aware that the cognitive model as illustrated in figure 1. is vastly simplified and fails to illustrate the complex way in which thoughts, emotions, physiological responses, behaviors, and environmental factors continuously interact and influence one another (Beck, 1995).

2.3.2 Cognitive distortions

All humans have vulnerabilities which make us prone to experience certain forms of cognitive distortions. The extent and content of these cognitive distortions vary over time and are unique to each person, as is the way we choose to cope with them (Kåver, 2006). Numerous cognitive distortions have been identified within CBT and presented below are those deemed most relevant for the study (Albano & DiBartolo, 2007; Beck, 1995; Friedberg & McClure, 2002; Kåver, 2006).

1. *All-or-nothing thinking*: Things are divided into categories of black and white. If your performance falls short of perfect, you see yourself as a total failure.
2. *Mind reading:* You believe that you know what others are thinking without having to ask them, and that others know your thoughts without you having to explain.
3. *Disqualifying the positive*: Positive experiences are rejected for no valid reason. In this way negative beliefs can be maintained despite being contradicted by everyday experiences.
4. *Catastrophizing*: The negative consequences of some events are inflated in your mind, resulting in an imagined and highly unlikely disaster scenario.
5. *Personalization:* You see yourself as the cause of some negative event which in fact you were not primarily or solely responsible for.
6. *Rash conclusions*: You make an interpretation of an event despite a lack of definite facts that convincingly support your conclusions.
7. *Should-statements:* In an attempt to motivate yourself, which often ends up as a form of punishment, you focus on the way you *should* be, act, feel or think.

2.3.3 CBT interventions

The goal of the CBT therapist is to help the client to identify, challenge, and modify his/her dysfunctional thoughts, and within CBT there is a wide array of cognitive and behavioral interventions that the therapist can use towards this aim. Whereas broad CBT interventions permeate the entire therapy more narrow CBT interventions are used at a particular point of the therapy in order to address certain dysfunctional thoughts. The *socratic dialogue* is one example of an overarching cognitive technique. When entering into this form of dialogue with a client the therapist assumes that the client alone carries the solutions to his/her problems. The therapist therefore takes a listening approach and tries to help the client forward through reflections, summaries, feedback and questions, but never by simply giving the answers.

From the socratic approach it naturally follows that the therapist aims to build a relationship with the client that is based on cooperation and respect. Within CBT this form of relationship is known as a *therapeutic alliance* and represents another example of a broad cognitive intervention. In order for the therapist to succeed in building this form of relationship he/she must show a keen interest in what the client says, be able to listen without judging, and prove that he/she is willing to confront the client while also conveying a genuine sense of sincerity and humor. CBT places high demands on the client who is expected to disclose sensitive information, engage in highly challenging emotional and cognitive tasks, and assume a high level of responsability for the therapy. In order for the client to feel secure and able to handle these demands he/she must at all points of the therapy be met with understanding, warmth, empathy and respect from the therapist. Presented below are some examples of the narrow CBT interventions deemed most relevant for the study (Albano & DiBartolo, 2007; Beck, 1995; Friedberg & McClure, 2002; Kåver, 2006).

Cognitive interventions

1. *Counteracting all-or-nothing thinking:* By asking questions and encouraging the client to reassess his/her rigid way of thinking, the client's ability to see things in a realistic and nuanced way is increased.
2. *Decatastrophizing:* This intervention can be used when the client anticipates very negative consequences to something that is mainly beyond his/her control. By examining the likelyhood of the scenario and how the client would react if the feared scenario actually did happen, the client's feelings of anxiety and helplessness are reduced.
3. *Counteracting personalization:* The therapist helps the client realize that he/she is not solely responsible for a certain situation, thereby promoting a more realistic view of the various contributing factors and reducing the client's feelings of guilt and shame.
4. *Changing perspective:* By encouraging the client to look at things from a different point of view the therapist helps the clients to distance himself/herself from the problem and the way he/she thinks about it.
5. *Clarifying idiosyncratic meaning:* In order for the therapist to understand exactly what a commonly used word or statement means to a client he/she sometimes needs to ask the client for a clarification Once the client is forced to specify what he/she means both therapist and client are able to reach a deeper and more complete understanding.

Behavioral interventions

1. *Behavioral experiment:* In a behavioral experiment the therapist encourages the client to test his/her beliefs and attitudes. For example, a client may be asked to gather information from other people in order to compare their answers to his/her predetermined opinions about them.

2. *Role play:* In this intervention the therapist and client act out situations that are relevant and important to the client. Through role play the client's various coping strategies can be examined and evaluated and he/she can be given the chance to experiment with more functional strategies within a safe environment.

2.4 Stuttering related social anxiety and CBT

2.4.1 Stuttering and the development of social anxiety and social phobia

There is considerable evidence that chronic stuttering in adolescence and adulthood is commonly associated with higher than normal levels of social anxiety (Messenger, Onslow, Packman & O'Brian, 2004; Blumgart, Tran & Craig, 2010; Mulcahy et al., 2008; Iverach et al., 2009). Social anxiety is characterized by fear and expectance of negative evaluation, particularly in social situations, and its occurrence among individuals who stutter is not surprising given the likelihood that their speech at some point was met by negative listener reactions (Mulcahy et al. 2008). There is evidence that children as young as four years old may evaluate stuttering negatively, and in a study exploring the frequency of bullying among 276 respondents from the British Stammering Association, the majority reported having experienced bullying at school (Hugh-Jones & Smith, 1999). These problems multiply during adolescence, often negatively impacting the self-esteem, social relationships, and academic performance of adolescents who stutter (Blood & Blood, 2004). Studies have also shown that pervasive negative stereotypes about stuttering exist in the general population, and it is not unusual for people to believe those who stutter to be self-conscious, anxious and lacking in confidence (Craig, Hancock, Tran & Craig, 2003).

Recently a growing body of evidence also suggests a high occurrence of social phobia (also known as social anxiety disorder) in people who stutter (Blumgart et al., 2010, Menzies, O'Brian, Onslow & Packman, 2008, Iverach et al., 2009). Social phobia is characterized by significant, enduring, and excessive fears of humiliation, embarrassment or negative evaluation in social situations. In most cases social phobia develops during childhood or adolescence, and its emergence is often associated with peer group rejection and negative life events. Hence, the negative childhood experiences associated with stuttering may act as precursors to the development of social phobia in adults who stutter (Menzies et al., 2008). Although the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) currently excludes the diagnosis of social phobia in individuals whose anxiety relates only to the fear of stuttering (Iverach et al., 2009), several studies have examined the prevalence of social phobia among adults seeking stuttering treatment by modifying the DSM-IV criteria to allow for a diagnosis of social phobia, when phobic symptoms were deemed excessive in relation to the severity of the stutter. These studies found that 40 - 60% of those seeking treatment for stuttering warranted a diagnosis of social phobia (Menzies et al. 2008; Blumgart et al., 2010; Stein, Baird & Walker, 1996).

2.4.2 Managing stuttering related social anxiety- the role of CBT

Among adults who receive speech-restructuring treatments long-term relapse rates are high and range across studies from 30% to 73%, depending on how a relapse is defined (St Clare, Menzies, Onslow, Packman, Thompson & Block, 2009). Guitar and Bass (1978) provided evidence that the presence of high levels of anxiety predicts poor response to standard speech-restructuring treatments. Another study, comparing anxiety levels in adolescents who had recovered from stuttering with levels in those who had not recovered, found significantly higher levels of anxiety among adolescents with persistent stuttering (Davis, Schisca & Howell, 2006).

CBT has long proved to be a highly successful method for treating social anxiety and social phobia, and several preliminary studies, combining speech-restructuring treatments with CBT programs for social anxiety, indicate that CBT can also be used to treat stuttering related social anxiety and social phobia. In the most controlled and extensive trial of CBT combined with stuttering treatment so far, Menzies et al. (2008) divided 30 adults who stuttered into two groups of which one received speech treatment preceded by 12 weekly CBT sessions, whereas the other received speech treatment only. When comparing the two groups immediately after the speech treatment, and at a 12-month follow-up, those who had received CBT showed significantly lower rates of social phobia, social anxiety and avoidance behaviors than those who had received speech-restructuring therapy only. However, the CBT treatment alone did not result in any changes in core stuttering behaviors and there was no difference in stuttering frequency or severity between the two groups after the entire treatment.

It is clear that clinicians working with people who stutter have long perceived a link between stuttering and anxiety. In a study by Lincoln, Onslow & Menzies (1996) 65% of 300 Australian speech-language pathologists reported that they regularly used some type of anxiety management strategies with people who stutter, despite never having received any form of anxiety management training themselves. However, there have also been reports of clinicians who express discomfort in dealing with stuttering related attitudes and feelings (Watson, 1995). As an aid to speech-language pathologists working with adults who stutter, a tutorial containing descriptions of CBT components commonly used within anxiety reduction treatment, and guidelines for how to apply them to stuttering therapy, was recently published (Menzies, Onslow, Packman & O'Brian, 2009). In Sweden two thesis works illustrating how CBT components may be used by speech-language pathologists working with adults and children who stutter have also been presented (Lundskog, 2004; Sjö, 2007).

2.5 Purpose

This paper aims to further expand our knowledge of stuttering treatment through a case study exploring how CBT components can be incorporated within stuttering treatment of an adolescent, and by examining whether the client found the treatment helpful.

3 METHOD

3.1 Inclusion criteria and participants

3.1.1 Inclusion criteria

The inclusion critera for participation in the study were (a) age between eleven and eighteen years old, (b) experiencing both core and seconday stuttering symptoms, (c) ability to attend weekly therapy sessions and willingness to complete extensive homework tasks between sessions, and (d) personal initiative in seeking therapy.

3.1.2 Client

The client is a 15 year old male from southern Sweden who sought stuttering treatment at a speech-language pathology department in this area. The client will hereafter be called Leonard.

Client description
Leonard is 15 years old and has recently started high school. During the initial evaluation sessions of the therapy he explains that he has stuttered for as long as he can remember, and that stuttering onset occurred when he was about five years old. The severity of his stutter has fluctuated since onset, but it has never disappeared entirely. Lately Leonard has started to fear that his grades might be negatively affected by his stutter since he avoids giving presentations, answering questions, and reading out loud in class. Leonard reveals that he has experienced bullying since the beginning of elementary school and that it got gradually worse until he recently started in a new class. He believes that he was bullied because he is "different", but not because he stutters. Leonard is unsure of whether his new classmates are aware that he stutters, but he attempts to hide his stutter as much as possible hoping that they have not yet noticed it and fearing that they would tease him if they did. Leonard grades his escape behaviors when stuttering (loosing eye contact and moving parts of the body) as severe. He reports that he often has negative thoughts before and after stuttering, that he frequently experiences strong feelings of embarrassment, helplessness, and fear, and that he often avoids words and situations out of fear of stuttering.

When asked about his expectations of the therapy Leonard answers that he hopes to learn how to get rid of the stutter. When the therapist explains that it is uncertain whether his stutter will disappear completely and that the therapy, if implemented, would therefore focus on helping him feel less limited by his stutter, Leonard is clearly disappointed but still very interested in beginning therapy. Thereafter the therapist explains the basic concepts of CBT and asks whether Leonard would be interested in participating in a study exploring how CBT principles can be applied to stuttering treatment. Leonard agrees to participate in the study.

During the initial evaluation sessions Leonard answers the questions posed by the therapist frankly and exhaustively, even those concerning sensitive and personal issues. He uses an advanced vocabulary, expresses himself well, displayes a sense of humor and does not seem to find the therapy situation uncomfortable. The therapist hears Leonard stutter softly only once or twice during the initial assessment sessions, which leads her to estimating his stutter as being relatively mild, even though Leonard does report stuttering slightly less than usual during the initial evaluation sessions.

3.1.3 Therapist
At the time of the study the therapist, who is also the author of this paper, was a fourth year speech-and language pathology student at Lund University. The treatment which forms the base of the study took place during her in-depth clinical internship and represents her first personal experience of stuttering intervention. In Sweden a formal education and license is required in order to practice CBT and it is important to note that the therapist in this study did not hold this license. Therefore, while various CBT components were incorporated within the stuttering intervention, this is not in any way equivical to the form of therapy offered by licensed CBT clinicians. The therapist's clinical supervisor and mentor during the internship, who is also the subject supervisor of this paper, is a speech-language pathologist with many years of experience within the field of stuttering treatment and who was completing a CBT education in order to become a licensed CBT therapist at the time of the study.

3.2 Ethical considerations

The client's name and other personal information has been altered in order to protect his anonymity. Leonard and his parents received information concerning the procedure and aim of

the study and were informed that participation would be anonymous. They were also informed that Leonard could choose to terminate his participation in the study at any time without having to provide an explanation, and that, should he choose to do so, this would not affect present or future treatments. Leonard and his parents provided written confirmations that they approved of his participation in the study (see appendix 1).

3.3 Treatment content and material

Leonard's treatment consisted of two initial assessment sessions, eight treatment sessions, and one final evaluation session over a period of five months. Each session lasted approximately one hour and took place once every week, or once every two weeks. A five week long pause within the treatment occurred between treatment session six and treatment session seven, as the therapist was not in Sweden during this period. The treatment consisted of speech-language pathology interventions and CBT interventions which were combined with the aim of creating a highly individualized therapy. The material used to describe and illustrate the content of the treatment sessions consists of tape recordings from all sessions, excluding the initial evaluation sessions, and a notebook used by the therapist and client during each session and by the therapist between sessions. The effectiveness of the treatment was evaluated through (1) a Self-Assessment scale (SA-scale), (2) the Wright & Ayre Stuttering Self-rating Profile (WASSP), (3) an in-depth interview and (4) a follow-up evaluation.

3.3.1 Treatment content

Tape recordings

Tape recordings from the eight treatment sessions and the final evaluation session were orthographically transcribed by the therapist. Thereafter the subject supervisor and the therapist individually analyzed the transcribed accounts of two randomly selected sessions by marking examples of (1) the treatment structure, (2) speech-language pathology interventions, (3) dysfunctional thoughts, and (4) CBT interventions. Since the two analyzed accounts showed a high level of consensus the therapist continued to use these four categories when analyzing the remaining transcriptions. When all recorded material had been analyzed the therapist chose the examples she deemed best suited to illustrate the client's dysfunctional thoughts and the CBT interventions used during the treatment. These examples were thereafter translated to English by the therapist and included in this paper.

Notebook

The notebook was used before each treatment session in order for the therapist to write down her plan for the session. During the session it was used by the therapist and client interchangeably to illustrate and clarify the subjects discussed, and after each session the therapist would use it to write down her reflections, as well as her ideas for future sessions. When writing this paper the author used the notebook as a complement to the transcribed accounts of the treatment sessions in order to establish the general progression of the therapy as well as the main themes covered during each session.

3.3.2 Measures of evaluation

Self-assessment scale (SA-scale)

The SA-scale is a simple scale with numbers ranging, for instance, from one to ten. Within the field of stuttering assessment, this type of scale has proved successful in combining the client's judgment of the frequency and severity of core stuttering symptoms and his/her experience of stuttering related thoughts and feelings into one single measure (Huinck & Rietveld, 2007). During each treatment session, as well as for the final evaluation session and follow-up

evaluation, the client was presented the question: "How bad has your stutter been since we last met?" and asked to grade his experience by indicating a number between one and ten (1= not bad at all, 10= extremely bad).

The Wright & Ayre Stuttering Self-Rating Profile (WASSP)
The WASSP, created by Louise Wright, Anne Ayre and Sarah Grogan, is a self-rating measure for adults who stutter. The reliability and validity of the measure have been found satisfactory. The WASSP was developed in order to measure changes in stuttering over time and to facilitate the setting of clinical goals. Adults who stutter are asked to rate 24 items using a 7-point scale to describe self-perceived severity (1= none, 7= very severe). The items are grouped into five sections: stuttering symptoms (8 items), thoughts about stuttering (3 items), feelings about stuttering (5 items), avoidance due to stuttering (4 items), and disadvantages due to stuttering (4 items). Although designed for use with adults who stutter, the creators of the measure report using it with adolescents aged 14 years and over (Ayre & Wright, 2009). As the formal Swedish translation of the WASSP was not yet completed at the time of this study the version used is an informal translation made by Per Alm, who has a Ph.D. in neuropsychology and who has made important contributions to the field of stuttering research in Sweden. Leonard was asked to complete the WASSP at five occasions: (1) during the initial assessment sessions, (2) during the sixth treatment session, (3) during the seventh treatment session, after a five week pause within the treatment (4) during the final evaluation session, and (5) six weeks post-treatment, during the follow-up evaluation.

In-depth interview
An in-depth interview is a loosely structured interview which allows the interviewer a high level of flexibility (Merriman, 1988). The in-depth interview held with Leonard took place during the final evaluation session and aimed to explore how his thoughts, feelings and behaviors had changed during the treatment period, as well as his general opinion of the treatment he had received.

Follow-up evaluation
Follow-up evaluations are crucial in order to assess whether the progress made during therapy remains after the treatment itself has been terminated (Kadzin, 1998). The follow-up evaluation of this study took place six weeks after the final evaluation session and consisted of a letter sent home to the client (see appendix 2). Leonard was asked to complete the SA-scale and the WASSP, and to answer a few general questions concerning his experience of the therapy. Three additional scales, which were designed by the therapist and will hereafter be called the *stuttering severity scales,* were also included in the follow-up evaluation. The stuttering severity scales were designed to measure Leonard's and his parents' opinions of how his core stuttering symptoms had changed since he began therapy. On three scales numbering from one to ten (1= not at all, 10= very much) Leonard and his parents were asked to grade (1) how much he had stuttered before starting therapy, (2) how much he had stuttered when therapy was terminated, and (3) how much he stuttered at the time of the follow-up evaluation. Leonard's parents were also asked to describe how they judged Leonard's stutter to have changed since he began therapy.

4 RESULTS

The result section starts with a description of the client's response to therapy, the structure of the treatment sessions and the main subjects discussed in therapy. Thereafter follows a section with

examples of dysfunctional thoughts and CBT interventions and a description of the speech-language pathology (SLP) interventions used within the therapy. The last section presents the results from the treatment evaluation measures.

4.1 The client's response to therapy

Leonard quickly grasps the connection between thoughts, feelings, physiological symptoms and behaviors, and is able to explore these connections in various situations. He also proves able and willing to discuss complex and abstract issues such as his thought patterns, his beliefs, his attitudes and his feelings. Leonard's advanced cognitive abilities and openness in combination with his curiosity, sense of humor and ease of expression makes him well suited for stuttering intervention incorporating CBT principles. Furthermore, the therapist finds that the establishment of a therapeutic alliance comes easily, and remains strong throughout the treatment period (see appendix 5 for examples of the therapeutic alliance).

During the course of the therapy Leonard becomes increasingly proficient in changing and widening his perspectives, and little by little he starts to accept greater responsibility for the therapy, as the therapist proves increasingly unwilling to lead the way. During the first months of therapy Leonard forgets to do his homework a couple of times, but this ceases to be a problem as he becomes increasingly involved in deciding the content of his homework. A few times Leonard becomes frustrated when his core beliefs are called into question by the therapist (for example that stuttering is "wrong"), and during the course of the therapy it becomes increasingly evident that he frequently uses his sense of humor as a way to change the subject when his beliefs and attitudes are being challenged.

4.2 Structure of the treatment sessions

The treatment session followed the session structure recommended within CBT literature although certain minor changes were made in order to adapt the structure to stuttering therapy, for example by asking the client to rate his *stutter* instead of his mood on an SA-scale at the beginning of each session. The treatment session structure used within this study is described below (see appendix 6 for examples of the session structure)

1) Introduction

Every session starts with a brief update of how the client is feeling and whether the stutter has bothered him much. He is also asked to grade how bad his stuttering has been since the last session on a SA-scale, from 1-10. Thereafter last week's homework is thoroughly reviewed and discussed.

2) intervention

In order to create a cohesive therapy the main issues of the previous session are briefly revisited and commented on before setting the agenda for the present session. Thereafter the session is spent discussing the issues on the agenda and using CBT and SLP interventions as needed.

3) Conclusion

During and after the intervention part of the session the homework for the next session is decided upon. Towards the end of each session the therapist asks the client (1) what was the most important part of the session, (2) what she did well during the session and (3) what she could have done better or differently.

4.3 Content of the treatment sessions

Treatment session 1 ***Speaking " wrong"***

Main themes explored during the first treatment session include Leonard's inclination towards all-or-nothing thinking and self-criticism, especially with regard to his speech.

Homework: To expose himself to his own stutter by reading a book out loud, and to examine whether everyone else has perfect speech by searching for "speech faults" in others.

Treatment session 2 ***Normal distribution curve***

During the second session Leonard gains a more nuanced picture of his own and other people's speech by discussing others' "speech-faults" and by marking his speech, and various other abilities, on a normal distribution curve (see appendix 3).

Homework: To read a book out loud, and to continue doing so *even* when beginning to stutter.

Treatment session 3 ***Long term vs. short term***

Leonard states that he considers not giving any presentations at school in order to avoid stuttering in front of his class. However, after exploring the effects of such a decision he decides that the short-term gains (avoiding embarrassment, less risk of being teased, more time left for other things) are outweighed by the long-term losses (lower grades, less experience, lower self-esteem).

Homework: To write down strategies he can use when giving presentations in the future.

Treatment session 4 ***Presentation circle***

The focus of the fourth treatment session is on increasing Leonard's confidence and sense of control in preparation for a coming presentation. A "presentation circle" is created and Leonard is asked to assign a piece of the circle to each item he considers part of a presentation (the size of the piece reflecting the item's importance). When stuttering is added to the presentation circle he realizes that it is of minor importance (5%), and that 95% of the circle is within his immediate control (see appendix 4).

Homework: To observe others who give presentations- what are their weaknesses and strengths?

Treatment session 5 ***Role play***

The goal of the role play is to decrease Leonard's fear and anxiety of being teased when giving a presentation. The therapist pretends to stutter while giving a presentation while Leonard takes the role of "the teaser" who interrupts her. Various possible reactions are discussed in order for Leonard to explore how he could cope should he find himself in a similar situation.

Homework: To give a presentation in front of the class.

Treatment session 6 ***Eye contact***

Leonard reports that his presentation went pretty well, and remaining problem areas are explored in order to decide the focus for the following sessions. The main alternatives are: increase eye contact, decrease associated body movements, stuttering modification, decrease negative thoughts, decrease avoidance, and lower speech rate. Leonard decides that he wants to start working on increasing eye contact.

Homework: To increase eye-contact while stuttering and to ask friends what they thought when they first noticed that he stutters.

Treatment session 7 ***What others think***

Treatment number seven follows a five week pause in treatments and is spent discussing Leonard's beliefs concerning what other people think when they hear him stutter, and by talking

about what he believes he does too much (is quiet, criticizes himself, compares himself to others) and too little (thinks "normal" thoughts).
Homework: To increase eye contact when stuttering and to ask friends if they notice a difference.

Treatment session 8 ***Unfair comparisons and self-criticism***
Exploring alternative thoughts in order to help Leonard be less self-critical and less prone to compare himself with others is the focus of the final treatment session.
Homework: To use the alternative thoughts discussed during the session when he finds that his mood is negatively affected by self-criticism and unfair comparisons.

Final assessment session ***Review and reflection***
During the final assessment session the therapist and client review the main themes of the therapy. Leonard is asked to comment various quotes extracted from the treatment sessions and to answer a few general questions concerning the therapy. The therapist also tells Leonard about the strengths and qualities she has observed in him during the course of the therapy.

4.4 Cognitive distortions

During the course of the therapy it becomes evident that many of Leonard's problems stem from his cognitive distortions, of which the most common are all-or-nothing thinking, personalization, mind reading, disqualifying the positive, and catastrophizing. Presented below are some excerpts from the treatment sessions which exemplify Leonard's dysfunctional thoughts (see appendix 7 for additional examples of cognitive distortions).

All-or-nothing thinking (session 1)
T: Hmm, Ok. So you're not "right". what about other people? Do you think your friends are "right", or your parents? Is there anyone who is "right"?
L: Yes there is.
T: There is?
L: You want me to mention who? Ok, I'd say my best friend is right, and...my sister is also right
T: Ok, are all your siblings right?
L: Hmm, yes I think they're right.
T: And your parents?
L: My parents are right too.
T: Ok, so you really do divide people up in wrong and right like that?
L: **If I follow that everything that's not right is wrong then I *have* to do it like that.**
T: Mm?
L: **Because it's how I look at the world. I like dividing things up, this is how it *is*.**

Personalization (session 7)
T: What has to have happened in order for it to get so bad that you think about if before falling asleep?
L: That I say something really wrong.
T: Can you give me an example of one time when that happened?
L: Well, I played on the same team as a friend a couple of weeks ago and it was a pretty intense game and then I was going to say "ops, looks like I'm getting beat here", **but I couldn't say it because I stuttered and then I got beat and then we lost. And it was all my fault.**
T: aha
L: And we were in a contest to get to another tournament, and **we had a chance to keep going, and then I blew it...shit.**

Disqualifying the positive (session 7)
L: And then if someone comes and gives me a compliment or words of encouragement and says "that's good that you dared to give a presentation even though you stutter" I'll think "typical, he noticed! But at least he didn't say anything during the presentation".

T: Plus you've gotten a compliment.
L: **But I've never really cared for compliments, have never really been able to accept them entirely. I don't really believe in them.**
T: Hmm, well, maybe you should work on that.
L: (Laughs) yes, I should really work on that.

4.5 CBT interventions

The cognitive and behavioral interventions implemented by the therapist were used to identify, challenge and modify the client's dysfunctional thoughts (see appendix 8 for an example). As stated, Leonard's main cognitive distortions were all-or-nothing thinking, personalization, disqualifying the positive, mind reading and catastrophizing. It naturally follows that the cognitive interventions most commonly used by the therapist were those aimed at addressing these particular thoughts. Some examples of such interventions are decatastrophizing, changing perspective and challenging all-or-nothing thinking, personalization and mind reading. The behavioral interventions most commonly used were behavioral experiments since these were often assigned as homework, but role play was also an important part of the therapy. Presented below are excerpts from the treatment sessions which exemplify how various CBT interventions were used within the therapy (see appendix 9 for additional examples of CBT interventions).

Change perspective (session 1)
T: Why is it worse to stutter with these people in your classroom, who know you a little bit, than with people you don't know at all?
L: Because if I start to stutter with them I'm always going to stutter with them. And then I imagine that they would think I'm a little strange because I stutter. Like "whats's wrong with him? He can't even talk". And that's something I would like to avoid.
T: **Is that something you would think if you met someone who stuttered?**
L: That depends on if I stuttered or not.
T: If we say that you didn't stutter.
L: I doubt it. Because I've met quite a lot of people who've had speech impediments, who've lisped, who can't pronounce certain things, who've stuttered. One who stuttered worse than I.
T: And who was still "normal"?
L: Yes, I've known that he stutters so I've been more patient with him.

Challenging all-or-nothing thinking (session 5)
T: But if you had chosen one of these reactions instead of being quiet and walking away, what do you think would have worked best?
L: "Challenging". Then I would have won and he would have lost, and that's what I want.
T: A lot of winning and loosing
L: There's always a winner and a looser, isn't there?
T: **Well, do we have a winner and a looser here? You and me? Does someone win and loose during our meetings?**
L: No, there's no looser. Or, it depends on how you look at it. I loose feelings, bad feelings and you win the material.
T: (Laughs) Wow, that was crass!
L: (Laughs) You loose lead, I win good feelings
T: **I mean, of course there's a winner and a looser if you play a game or something, but...**
L: But here, with us two its win-win.
T: Exactly, and don't you think that's usually the way it is when we communicate. That it's an exchange. It's quite seldom you have a conversation and one person walks away and thinks "ha! I got him good back there!"
L: Well, when you fight you usually do. I don't know how you fight but..
T: **Mm, that's true. When you fight you do have winners and loosers...but do you want a fight?**
L: No, I suppose not. I don't like fights.

Behavioral experiment (session 7)

T: **Ok. We talked about that you should ask people what they thought when they first noticed that you stutter, to see if they actually think about it as much as *you* think they do.**
L: Mm, I asked my best friend that, and he said "yes, I remember when you told me and I remember what I thought and I remember what I said because they were all exactly the same thing: "aha"
T: (Laughs)
L: Well, thanks, lots of feedback there!
T: Yes, but it still tells you quite a lot, I mean if someone only thinks "aha"
L: Like I care!
T: So what are your thoughts about this? About that reaction?
L: Ok, very rewarding, kind of. No, I mean, it was short and concise, but pretty interesting cause it showed that he actually didn't care. Not at all.

4.6 Speech-language pathology (SLP) interventions

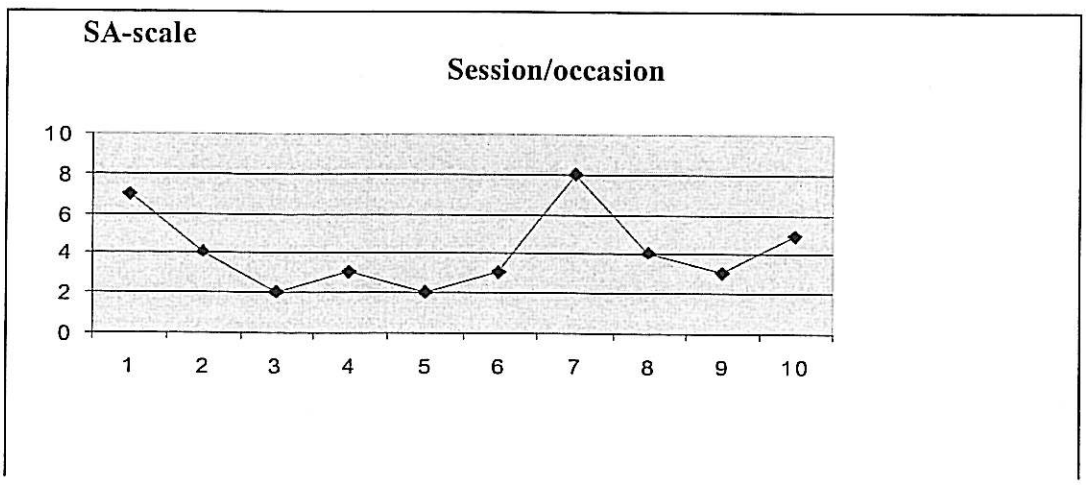
During almost every treatment session the therapist used various speech-language pathology interventions in combination with the CBT techniques. The general trend was that the SLP interventions implemented in the initial sessions were of a general nature and took up a larger portion of the session, whereas those implemented during the later part of the treatment were more closely associated with the client's particular problems and took up a smaller part of the session. During the course of the treatment the therapist explained the multifactoral view of stuttering, discussed the client's stuttering history and informed about factors which might influence stuttering severity. Different treatment methods were discussed, "difficult" words, letters and situations were examined, and the differences between "hard" and "soft" stutters were explored. The therapist also informed the client about various strategies to maintain fluency and about voluntary stuttering. The various functions of speech and communication were thoroughly examined as were communication rules, especially those concerning the role of eye contact and the way associated body movements might affect a communication partner.

4.7 Measures of evaluation

4.7.1 SA-scale

Leonard's marks on the SA-scale ranged between 2.0 and 8.0. A general trend was that his marks were lower when treatment was implemented than when no treatment was in effect. During the first part of the treatment (session 1-6) the client's experience of his stutter improved significantly. Thereafter, following a five week pause in treatments, (session 7) he judged his stutter to have been slightly worse during the five week pause than it had been before he started his treatment. The following two weeks of therapy the client's marks decreased once again (session 7-9). When measured six weeks after the treatment was terminated (occasion 10), his marks had increased once again but were still well below pre-treatment levels. The results are presented in table 1.

Table 1. The table illustrates the client's answer to the question: "How bad has your stutter been since we last met on a scale ranging from one to ten (1= not bad at all, 10= extremely bad)?" at ten occasions.



4.7.2 The Wright & Ayre Stuttering Self-Rating Profile (WASSP)

During the treatment period Leonard filled out the WASSP at four occasions: (1) During the first assessment session, (2) during treatment session number six, (3) during treatment session number seven, after a five week pause in the treatment, and (4) during the final evaluation session. Six weeks after the treatment was terminated the client was asked to fill out the WASSP one final time (5) as a part of the follow-up evalutaion. Presented in table 2 are the averages of the numbers marked on each section of the WASSP at these five occasions (see appendix 10 for the client's marks on each of the 24 items). The general trend is that the averages of all five sections fell during the periods when treatment was implemented (between occasions 1 and 2, and between occasions 3 and 4) and rose when treatment was not in effect (between occasions 2 and 3, and between occasions 4 and 5). All section averages were lower post-treatment than pre-treatment. However, whereas the averages of all sections, except the section concerning stuttering behaviors, were still lower at the time of the follow-up evaluation than they had been pre-treatment, the average of the stuttering behavior section was higher at the time of the follow-up evaluation.

Table 2. The table illustrates the average of the numbers marked on each of the five WASSP sections at five occasions (1= none, 7= very severe).

Occasion	**1**	**2**	**3**	**4**	**5**
Stuttering behaviors	5.5	4.1	5.3	4.5	5.8
Thoughts about stuttering	5	3.7	4	3.3	3.7
Feelings about stuttering	4.4	3	3.8	2.6	3.2
Avoidance due to stuttering	3.5	2.3	2.5	2.3	2.0
Disadvantages due to stuttering	5	3.3	4.3	3	3

4.7.3 In-depth interview

During the final evaluation session the therapist conducted an in-depth interview with the client. First Leonard was asked to comment a few quotes which the therapist had extracted from previous treatment sessions in order to examine whether some of his dysfunctional thoughts had given way to a more realistic and functional way of thinking. Thereafter Leonard was asked to answer a few general questions concerning his experience of the therapy.

Quote 1

"T: Maybe there's a pretty big chance that even if people knew that you stutter, that it's something that people wouldn't think about a lot or care very much about?

L: No, I can imagine that. But I'd rather avoid that they find out than run the risk of someone teasing me.

T: Is that a strategy that you might use your entire life?

L: That depeds on how much the stutter disappers, but I wouldn't mind having it this way through highschool."

T: Do you still feel that way?

L: Yes I do. But I feel it less.

T: Less how?

L: I mean, there's a bigger chance that I won't hide the stutter and just not give a shit about it and do what I should do.

Quote 2

"L: The majority just don't react at all when I stutter. Among those who do react, 50-50 that they react negatively.

T: You mean a 50% chance that they react negatively and a 50% chance that they react

positively?
L: Exactly"

L: Hmm, well that's actually changed. Now I'd probably say that 85% wouldn't care at all or react positively, and 15% would react negatively.
T: Mm, and then we made this list with the things you think go through people's minds when they notice that you stutter. Is there anything you would like to change, add or remove from it?
L: No, the only thing I can think of is to add a big empty space to show that the person doesn't care at all.

Quote 3

"L: I might be a perfectionist for myself, how I should be. I know I should be right, but I'm not right"

L: That sounds a lot like me
T: Hmm, how do you mean?
L: I'm not a perfectionist for cleaning my room, I'm really not. But to be a perfectionist for how I am and how I look and how I act, I can imagine that I am like that. But I'm not right.
T: How do you mean "not right"?
L: Well, from a perfectionistic point of view. Do you understand?
T: Mm, from a perfectionistic point of view. But this perfectionistic point of view, do you save that only for yourself? Or do other people have to live up to it as well?
L: I save it for myself. It's mine.
T: Ok, and do you see any problems with that?
L: That I only see fault in myself and not in others and therefore I can't compare them. And maybe that I see some faults in myself that nodody else sees…

Question 1

T: **What was the most important part of coming here?**
L: The normal distribution curve. If we're looking at what we did that was most important, because it changes everything, more or less. Thoughts and feelings and what I do…
T: **If you were to try to pinpoint how your thoughts have changed…**
L: Well, the way I think about wrong and right has changed. When we did that normal distribution curve it made me realize that I'm not the worst, im not the best either, but I'm middle-ish, and that changed my entire point of view.
T: Where on the scale had you imagined that you were placed before?
L: Pretty far down. And then I realized: Wow! Im not that far down at all (see appendix 3). The presentation circle was really good in that way too.
T: What about it did you like?
L: Well, I have a tendency to increase that stuttering piece about 20 times so that it takes up 100%. And now I see that it really isn't that much. Same thing as with the normal distribution curve. It's really not that damn terrible (see appendix 4).
T: A few "catastrophy-thoughts" perhaps?
L: Yes it probably was. But they are gone now, that's good.
T: **And what has changed concerning your feelings, about your stutter and in general?**
L: I think I've become calmer
T: And why is that in that case?
L: I've realized that I can influence how things affect me, and that my faults obviously weren't as big as I thought, just…small faults (laughts),
T: (Laughs) **And your behavior? You said earlier that you've started doing more things?**
L: Yes I did. I've started talking more and more. I've become more self-confident I think.

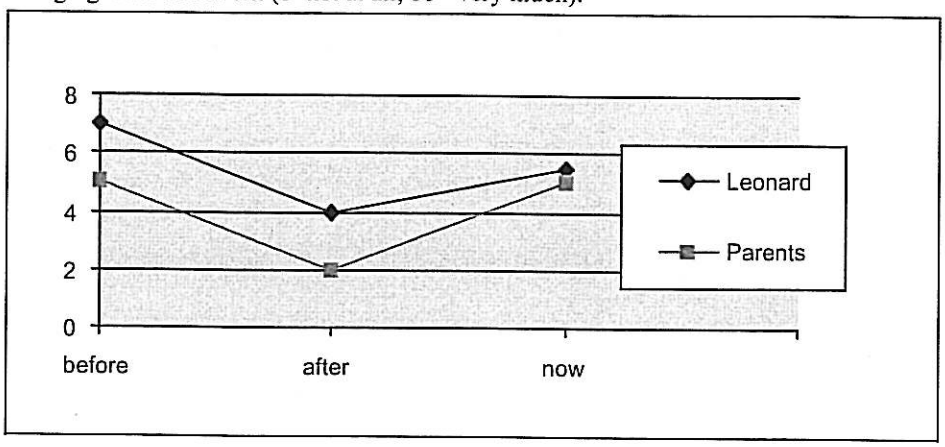
Question 2

T: **Is there anything that you've missed? Anything you would have liked to see more of, or that we'd done it in a different way?**
L: No, not that I know. It was good that we tried *not* only doing a bunch of exercises but more talked about the stutter.

4.7.4 Follow-up evaluation

Leonard's and his parents' marks on the stuttering severity scales indicate that his stuttering frequency decreased during the treatment, but increased again once the treatment was terminated. However, whereas the parents believed that Leonard stuttered as much at the time of the follow-up evaluation as he had pre-treatment, Leonard himself judged that he stuttered less at the time of the follow-up. The results are presented in table 3.

Table 3. The table illustrates Leonard's and his parents' marks on the stuttering severity scales. They were asked to indicate how much Leonard stuttered pre-treatment, post-treatment and at a follow-up evaluation on three scales ranging from one to ten (1=not at all, 10= very much).



Additional questions

Leonard's parents were also asked to answer one additional question:
1) How do you feel that Leonard's stutter has changed since he started therapy?"
Answer: "Definitely less stutter during ongoing treatment."

Leonard was also asked to provide answers to a couple of questions concerning the therapy:
1) What is the most important thing that you learned during therapy?
Answer: "That it wasn't as bad as I though. That I'm not that different."

2) What was the best thing about the therapy?
Answer: "To talk to Tina (the therapist). Probably that I felt better after each meeting."

5 DISCUSSION

5.1 Method discussion

The study would be more convincing if it had contained more than one client. This limitation is due to the lack of adolescents seeking stuttering treatment at the department of speech-and language pathology where the study was conducted. At the time of implementation of the study Leonard was the only person who fulfilled the study's inclusion criteria at this time.

Another possible weakness of the study is the therapist's limited first-hand experience of stuttering therapy and CBT. The client in this study was not only one of the therapist's first stuttering clients, but he was also the first client with whom the therapist used CBT interventions. It is likely that the therapist's limited experience and unfamiliarity with her new role had a negative impact on the way in which therapy was conducted and the results concerning the efficacy of the therapy would probably have been more dramatic and convincing

had the therapist possessed greater clinical experience. However, for the purpose of this study the therapist's lack of clinical experience can also be considered a strength as it proves that therapists with limited clinical experience are also able to apply CBT principles to stuttering treatment with adolescents.

One obvious shortcoming of this study is that the author and the therapist are the same person, thereby significantly increasing the risk of bias on the part of the therapist as well as on the part of the client. It cannot be ruled out that the therapist unintentionally allowed her beliefs and desires to influence the client's performance and evaluation responses through an effect known as *experimenter expectance*. Although the client was never told that the evaluation measures would be used to evaluate the effectiveness of the therapy it is not unlikely that he came to draw this conclusion concerning at least some of the measures. If this were to be the case, the client's awareness of the purpose of the study and his familiarity with the therapist increases the risk that he might alter his responses in order to give the therapist the answers he thought she wanted, as an effect of *participant bias* (Kadzin, 1998). The multiple forms of evaluation measures used within this study lessen the risk of participant bias since altered responses on some measures but not others, or different levels of alteration, would result in little or no correlation between the measures. The author also repeatedly told the participant that truthful answers were in his best interest since his answers formed the base for the intervention.

An additional threat to the study's validity is the lack of continuous evaluation before and after the treatment was implemented. Ideally a baseline assessment should have been carried out before the treatment was implemented in order to establish possible positive and negative trends in primary and secondary stuttering symptoms, as well to assess the level of symptom variability. A baseline assessment would greatly have increased the therapist's ability to determine the significance of the results presented, as well as her ability to evaluate the likelihood that other factors and events in the participant's life (maturation, change of school, etc.) accounted for these changes. The study would also have benefited from a follow-up evaluation administered at a minimum of six months post-treatment in order to examine the long-term effects of the therapy (Kadzin, 1998). The reason behind these shortcomings is the limited time available for implementation of the study.

Finally, the therapist found it difficult to capture the essence of many dysfunctional thoughts and CBT interventions in a format that could be presented in this paper. The reader should be aware that the examples presented in the results section and in appendix 7, 8 and 9 are but very limited excerpts from the therapy. Some dysfunctional thoughts and CBT interventions, although often occurring during the therapy, could not be presented due to the lengths of the dialogues or because the information disclosed in the dialogues was deemed too personal. Since the examples presented in the paper have been translated from Swedish to English it is also possible that the dialogues presented sound less natural, and that the meaning of some words and sentences have been slightly altered.

5.2 Results discussion

5.2.1 CBT components within stuttering intervention

Stuttering treatment incorporating key CBT principles proved a viable therapy option. The client was willing and able to discuss and explore his thoughts, feelings and behaviors and became increasingly capable of analyzing his own thoughts and applying the strategies he learned in therapy on his everyday life. The session structure recommended within CBT literature was

easily applied to stuttering treatment and could be adapted when needed in order to address the specific problems of people who stutter.

The CBT strategies complemented the SLP interventions used during the therapy, and these two components were combined in all treatment sessions except the last one, when more general thought patterns, not specifically connected to stuttering, were the focus of the session. When analyzing the transcribed accounts of the sessions it was hard, and sometimes impossible for the therapist to establish where an SLP intervention ended and a CBT strategy began, since both types of interventions were usually combined when thoughts, feelings and behaviors associated with stuttering were addressed. However, although the two types of interventions often overlapped they were by no means interchangeable. The SLP interventions enabled the therapist to explain and explore various aspects of the client's core and secondary stuttering symptoms and to place these in the wider perspective of speech and communication. The CBT interventions, on the other hand, proved essential in order to reach a deeper understanding of the client's problems and, most importantly, provided the therapist with the tools she needed to help the client challenge and modify the dysfunctional thoughts and beliefs causing many of his problems.

5.2.2 CBT components with an adolescent

As expected several issues arose during the therapy which seemed particularly tied to the developmental phase of the client. One example was that Leonard sometimes found it hard to separate his own views from those of his parents, thereby reflecting the fact that most adolescents, despite their increased level of independence, are still highly influenced by their parents. Another example was that Leonard during the initial stages of the therapy had a tendency to shy away from making decisions concerning the goals and general course of the therapy by stating that the therapist, in her position as an SLP student, was better suited to make these decisions. This unwillingness could easily be interpreted as a reflection of adolescents' general unfamiliarity with setting their own goals, as these are often set for them by parents, teachers and other adults. However, once the therapist explained her rational for refusing to make certain decisions for him, Leonard became increasingly involved in the decision-making process. Evident throughout the therapy, and reflected by various dysfunctional thoughts, was the client's inclination towards egocentrism. Leonard spent much time pondering what others thought of him, particularly with respect to his stutter, and showed clear tendencies of projecting his own negative thoughts ("there is something wrong with me", "I can't even speak") onto his "imaginary audience". As a result of this egocentric worldview the client found it very hard to believe that others might be utterly indifferent to his stutter even though he himself felt very strongly about it.

However, these shortcomings were vastly outweighed by the client's strengths and qualities, many of which also seemed connected to his adolescent status. For example, Leonard proved capable of abstract reasoning, and his cognitive flexibility made it easy for him to explore a wide range of perspectives and possibilities in a way that would have been impossible for a younger child. At the same time his system of secondary stuttering behaviors, although complex and partly automated, was not as deeply rooted as it would have been ten years later. His focus towards the future, another typical trait of adolescence, proved an important motivational factor as he was willing to suffer short-term losses (feeling embarrassed, running the risk of being teased) in order to achieve long-term gains (good grades, experience, higher self-esteem). Although the client reported that he occasionally experienced strong feelings of embarrassment these were outweighed by his curiosity and his wish to gain a more complete understanding of himself and those around him. He therefore proved more than willing to accept the therapist's

challenges to experiment with various aspects of his stutter outside of the therapy room and repeatedly asked people in his surrounding about their impressions of his stutter. Finally, the therapist found that a therapeutic alliance was easily established between herself and the participant. It is possible that the fact that both were students, with an age difference of only ten years, facilitated the establishment of the alliance, especially concerning the aspect of equality. On the whole, implementing CBT principles with an adolescent proved a rewarding experience for the therapist, as well as for the client.

5.2.3 Treatment effectiveness

The findings from the evaluation measures used within the study indicate that the client's secondary stuttering symptoms decreased significantly during the treatment, thereby suggesting that the client was helped by the therapy.

The *SA-scales, stuttering severity-scales, and WASSP assessments* clearly show that the client's core and secondary stuttering symptoms decreased when treatment was implemented and increased when no treatment was in effect. In the SA-scales and WASSP assessments this trend is evident not only from the pre-treatment, post-treatment, and follow-up evaluations, but also from the assessments made before and after a five week pause within the treatment. The fact that these multiple implementations and withdrawals of therapy are clearly reflected in both forms of evaluation measures strongly suggests that the treatment, and not some other factor or event in the client's life, is responsible for the changes noted (Kadzin, 1998). However, from a therapeutic standpoint these results are worrisome as it is desirable that the positive effects of a treatment last long after the treatment itself is terminated.

Concerning the post-treatment increase in secondary stuttering behaviors (feelings and thoughts about stuttering, avoidances and disadvantages due to stuttering) as indicated by the WASSP assessments, one possible explanation is that the therapy did not last long enough for the positive results to remain stable. More than eight treatment sessions might have been needed in order to more permanently modify the client's negative thought patterns by successfully teaching him to become his own therapist. It is also possible that the five week pause within the treatment period had a negative effect on the client's progress. However, it is important to note that although there was a slight increase in secondary symptoms during the six weeks which separated the termination of therapy from the follow-up evaluation, all secondary stuttering symptoms were still marked as significantly less severe at the follow-up evaluation than they had been before the treatment started.

Concerning the core stuttering symptoms, as measured by the stuttering severity-scales and by the stuttering behaviors section of the WASSP, the clear correspondence between treatment implementation and a decrease in core stuttering symptoms is surprising for two reasons. First, none of these symptoms, except the loss of eye contact, was the focus of any direct intervention during the course of the therapy. Secondly, other studies have failed to show that CBT alone affects the frequency or severity of core stuttering symptoms among adults who stutter. One possible explanation for the results in this study is that the client's core symptoms were indirectly affected by the changes in secondary stuttering symptoms. It does not seem unlikely that a therapy-induced reduction in secondary symptoms, such as reduced levels of stress and anxiety, could cause a reduction in core stuttering behaviors as well. Another possible explanation is that the core symptoms were not at all affected by the therapy and that the changes simply reflect the client's natural fluctuations in stuttering frequency and severity. As stated, a baseline assessment would have increased the therapist's ability to determine the significance of the changes occuring in core stuttering symptoms during the therapy. However, as no baseline

assessment was implemented it is hard to determine which of the two explanations is the more likely, and it is possible that the answer could be a combination of the two factors.

An important finding of the study is that the client, after having completed the therapy, appears to be less affected by his core stuttering symptoms than he was pre-treatment. Although he marked his core stuttering behaviors as more severe at the time of the follow-up evaluation than he had pre-treatment, his secondary symptoms were marked as significantly less severe at the time of the follow-up. These findings suggest that the client, during the course of the therapy, learned to limit the extent to which his core stuttering behaviors affect his thoughts, his mood and his behavior.

The answers provided by the client during the *in-depth interview* clearly show that he believes he was helped by the therapy. During the interview Leonard states that he has gained a less negative view of what others think about him when he stutters and that he has realized that many do not even care whether he stutters or not. During the course of the therapy he has also understood that his stutter is not as severe as he originally thought and that it affects his speech and his communication to a lesser degree than he had previously imagined. Leonard's proneness to all-or-nothing thinking also gave way to a more nuanced way of thinking through various CBT interventions implemented within the therapy. During the in-depth interview Leonard repeatedly confirms that his greatest insight during the therapy was that his speech and he himself are not as "wrong" as he had previously believed. Despite these insights he often slips back into his old habit of dividing things into categories of "wrong" and "right", but also proves aware of the fact that he judges himself by higher standards than he uses when judging others, and of the negative consequences that might follow from this "perfectionist view" concerning himself.

When asked about how his feelings have changed during the course of the therapy Leonard answers that he feels calmer and more self-assured than he did before. Concerning his behaviors, Leonard claims that he is more likely to do what he knows he *should* do without trying to hide his stutter, and that he talks more since starting therapy. Leonard also mentions that he appreciates that the treatment did not mainly focus on exercises, thereby proving that some adolescents welcome this form of abstract and discussion-based intervention. The changes in Leonard's way of thinking correspond well with the CBT interventions implemented to identify, challenge and modify his cognitive distortions. The changes in feelings and behaviors mentioned by the client, on the other hand, were not the focus of specific interventions during the course of the therapy. It can be assumed, rather, that as Leonard learned to steer his thoughts into more functional and positive paths, his mood and behaviors were also positively affected by this cognitive change.

Finally, the answers provided in the *follow-up assessment* prove the permanence and importance of Leonard's insight that he had overestimated the disadvantages he experienced due to his stutter, and the extent to which stuttering stigmatized him and made him "different" from others. Leonard's answers also make it clear that apart from enjoying the positive effects of the therapy the therapy itself also proved a positive experience.

5.3 Conclusions and implications

Although the possibility to generalize the results from this study is severely limited by the fact that it is a single case study, the results strongly suggest that in *this* particular case CBT principles could be successfully applied to stuttering treatment with an adolescent. However,

further research, including additional case-studies as well as experimental studies, is needed to explore whether the positive results from this case study can be generalized.

The various alternatives for combining speech-language pathology interventions with CBT, and the advantages and disadvantages of each alternative, also need to be further examined. It is important to note that speech-language pathologists do not typically receive CBT training within their education and their knowledge within this field is therefore very limited compared to that of CBT psychologists and psychotherapists. Alternative options for combining speech-langugage pathology interventions and CBT for adolescents who stutter should therefore include increased cooperation between these two groups of professionals, especially in cases where the client experiences high levels of social anxiety and extensive secondary stuttering symproms *as well as* severe core stuttering symptoms.

Applying CBT components to stuttering treatment with an adolescent was often challenging, for the therapist as well as for the client of this study. Nevertheless, the vast opportunities for self-reflection, cognitive growth and personal development experienced by the therapist, as well as the emotional rewards of a strong therapeutic alliance, made it more than worth while. The author therefore recommends that speech-language pathologists, especially those involved in stuttering treatment with adolescents, find out for themselves if some of their clients would profit from an intervention incorporating elements of CBT.

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Appendix 1

Information till deltagare

Jag ska under vårterminen 2010 skriva en magisteruppsats i logopedi. I uppsatsen skulle jag vilja undersöka och utvärdera hur det fungerar att använda ett kognitivt förhållningssätt i stamningsbehandling av tonåringar. Det är viktigt att utveckla och utvärdera nya metoder för att hjälpa personer som stammar och jag hoppas kunna bidra till detta med min uppsats. Det finns även en möjlighet att magisteruppsatsen kommer att publiceras i en vetenskaplig tidsskrift.

Ett kognitivt förhållningssätt innebär att man utgår från att människors tankar och föreställningar påverkar deras känslor och handlingar. Inom stamningsbehandling betyder det att man ser på hur clientens tankar och ideer om stamningen påverkar känslor och beteende.

_____ har jag haft min fördjupningspraktik inom området stamning och då jobbade du och jag med din stamning utifrån en kognitiv metod.

Jag skulle nu vilja be om din tillåtelse att använda de inspelningar vi gjorde under behandlingen, tillsammans med anteckningar jag gjorde under och efter varje terapitillfälle och de utvärderingsformulär som du fyllde i före, efter och under behandlingen för min magisteruppsats. I uppsatsen kommer du att vara helt anonym så ingen ska kunna känna igen att det är dig det handlar om. Därför kommer jag att ändra ditt namn och alla andra uppgifter som skulle kunna leda till att du känns igen.

Du bestämmer själv om du vill delta, det är helt frivilligt och ditt beslut kommer inte att påverka din logopedkontakt. Inga andra än jag och mina handledare kommer att ha tillgång till materialet.

Vi svarar gärna på frågor om undersökningen.

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Svarsblankett för studie av tillämpning av kognitivt förhållningssätt vid stamningsbehandling av tonåringar lämnas till Tina Rudberg, Institutionen för logopedi, foniatri och audiologi, Universitetssjukhuset, Lund.

Jag lämnar mitt tillstånd till att det material som spelats in, de anteckningar som gjorts och de utvärderingsformulär jag fyllde i i samband med min stamningsbehandling används i Tina Rudberg magisterarbete i logopedi. Jag samtycker även till att magisteruppsatsen eventuellt publiceras i en vetenskaplig tidsskrift.

Jag har läst igenom informationen och Tina har förklarat målsättningen med undersökningen. Jag förstår jag kommer att vara anonym och att deltagandet är helt frivilligt och inte påverkar framtida logopedkontakter.

Namn .....

....

Namnteckning Ort och datum

Information till föräldrar

Jag heter Tina Rudberg och går fjärde och sista året på logopedprogrammet i Lund. Jag ska under vårterminen 2010 skriva en magisteruppsats inom logopedi. Som ämne för uppsatsen har jag valt att undersöka och utvärdera tillämpningen ett kognitivt förhållningssätt inom stamningsbehandling av tonåringar. Det finns ett stort behov av utveckling och utprövning av behandlingsmetoder vid stamning och jag hoppas kunna bidra till detta med min magisterarbete. Det finns även en möjlighet att uppsattsen publiceras i en vetenskaplig tidsskrift.

Ett kognitivt förhållningssätt innebär att man utgår från att människors tankar och föreställningar påverkar deras känslor och handlingar. Inom stamningsbehandling betyder det att man ser på hur clientens tankar och ideer om stamningen påverkar hans/hennes känslor och beteende.

Jag har haft min fördjupningspraktik inom området stamning och har sedan _____ haft Leonard i behandling. Efter att ha förklarat för honom vad ett kognitivt förhållningssätt innebär och fått hans godkännande att arbeta utifrån detta perspektiv har jag använt mig av ett kognitivt förhållningssätt i stamningsbehandlingen och jag har även fått hans tillåtelse att spela in våra behandlingstillfällen.

Jag skulle nu vilja be om er tillåtelse att använda detta inspelade material, tillsammans med anteckningar jag gjort under och efter varje terapitillfälle och de utvärderingsformulär som Leonard fyllt i före, efter och under behandlingen för min uppsats. I uppsatsen kommer Leonard att vara helt anonym. Namn och andra uppgifter som skulle kunna leda till igenkännande ändras. Deltagandet är helt frivilligt och ert beslut om deltagande kommer inte att påverka ev. framtida logopedkontakt. Inga andra än jag och mina handledare kommer att ha tillgång till materialet.

Vi svarar gärna på frågor om undersökningen.

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Svarsblankett för studie av tillämpning av kognitivt förhållningssätt inom stamningsintervention av tonåringar lämnas snarast till Tina Rudberg, Institutionen för logopedi, foniatri och audiologi, Universitetssjukhuset, Lund.

Vi lämnar härmed vårt tillstånd till att material som spelats in, anteckningar samt ifyllda utvärderingsformulär från Leonards stamningsbehandling analyseras och används i Tina Rudbergs magisterarbete i logopedi. Vi samtycker även till att magisteruppsatsen eventuellt publiceras i en vetenskaplig tidsskrift.

Vi har läst igenom informationen och projektledarna har förklarat målsättningen med undersökningen. Vi är medvetna om att alla data behandlas konfidentiellt och att deltagandet är helt frivilligt och inte påverkar framtida logopedkontakter.

Förälders namn .....

Telefonnummer .....

Barnets namn .....

Barnets födelsedatum .....

....

Förälders namnteckning Ort och datum

Appendix 2

Hej Leonard!

Här kommer frågorna jag sa att jag skulle skicka ut till dig, de gäller behandlingen hos mig och hur du har det med stamningen nu.
Jag skickar även med ett papper som jag skulle vilja att någon av dina föräldrar fyller i (men bara om du tycker att det känns ok såklart). Efter att ni har svarat på frågorna är det bara att lägga dem i kuvertet och skicka in dem till mig .

Det går jättebra att ringa mig om ni har några frågor: 070-738 9035
Tack för hjälpen och ha det så bra!

Vänliga hälsningar,
Tina Rudberg

Avdelningen för logopedi, foniatri och audiologi, Institutionen för kliniska vetenskaper, Lund, Lunds universitet, Universitetssjukhuset, 221 85 Lund

1. Hur jobbigt tycker du det är att stamma just nu?

inte alls jobbigt extremt jobbigt

1 2 3 4 5 6 7 8 9 10

2. Hur mycket stammade du innan behandlingen började?

aldrig väldigt mycket

1 2 3 4 5 6 7 8 9 10

3. Hur mycket stammade du när behandlingen avslutades ?

aldrig väldigt mycket

1 2 3 4 5 6 7 8 9 10

4. Hur mycket stammar du nu?

aldrig väldigt mycket

1 2 3 4 5 6 7 8 9 10

5. Vad var det viktigaste du lärde dig under behandlingen?

6. **Vad var det bästa med behandlingen?**

7. **Vad hade det kunnat vara mer av?**

8. **Övrigt:**

Till Leonards föräldrar

Hej,

Leonard gick i stamningsterapi hos mig för en tid sedan och jag skulle gärna vilja att ni svarar på några frågor om hur ni upplever att hans stamning har förändrats sedan han började behandlingen. Efter att ni svarat på frågorna är det bara att lägga dem i kuvertet ni fick med det här brevet och skicka in dem till mig.

Det går jättebra att ringa mig om ni har några frågor: 070-738 9035
Tack för hjälpen!

Vänliga hälsningar,
Tina Rudberg

Avdelningen för logopedi, foniatri och audiologi, Institutionen för kliniska vetenskaper, Lund, Lunds universitet, Universitetssjukhuset, 221 85 Lund

1) Hur mycket stammade Leonard innan behandlingen började?

aldrig väldigt mycket

1 2 3 4 5 6 7 8 9 10

2. Hur mycket stammade Leonard när behandlingen avslutades?

aldrig väldigt mycket

1 2 3 4 5 6 7 8 9 10

3. Hur mycket stammar Leonard nu?

aldrig väldigt mycket

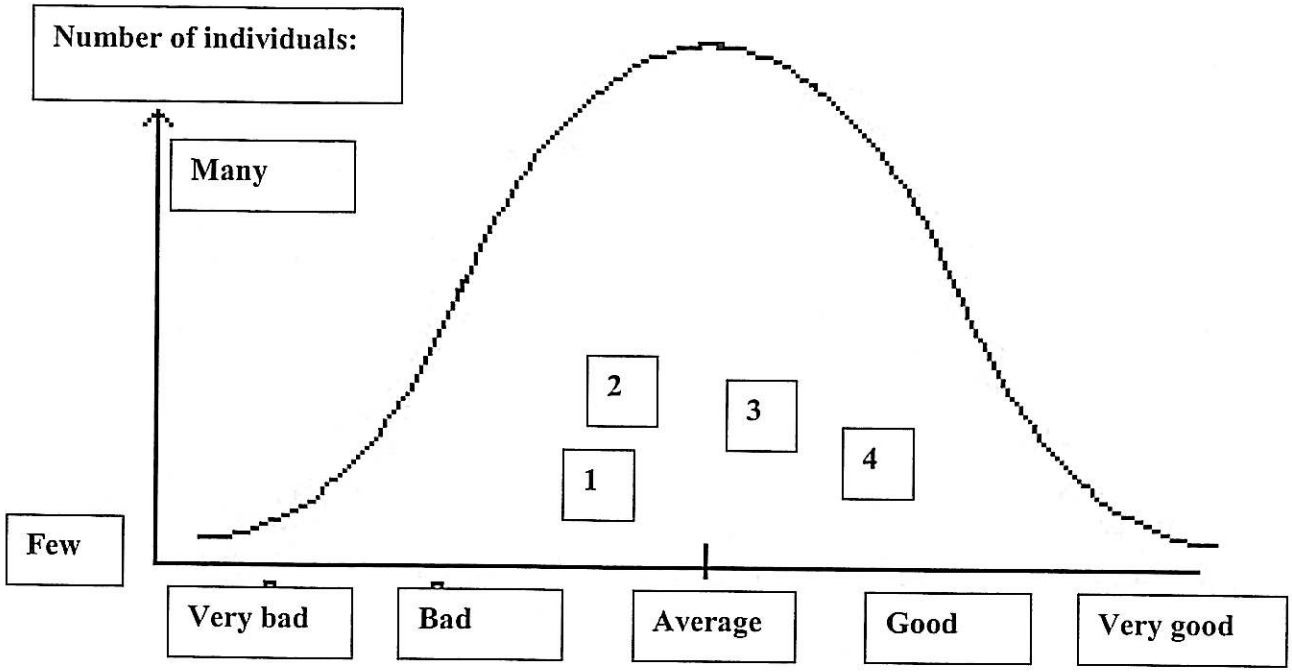
1 2 3 4 5 6 7 8 9 10

4. Hur tycker ni att Leonards stamning har förändrats sedan behandlingen började?

5. Övrigt:

Appendix 3

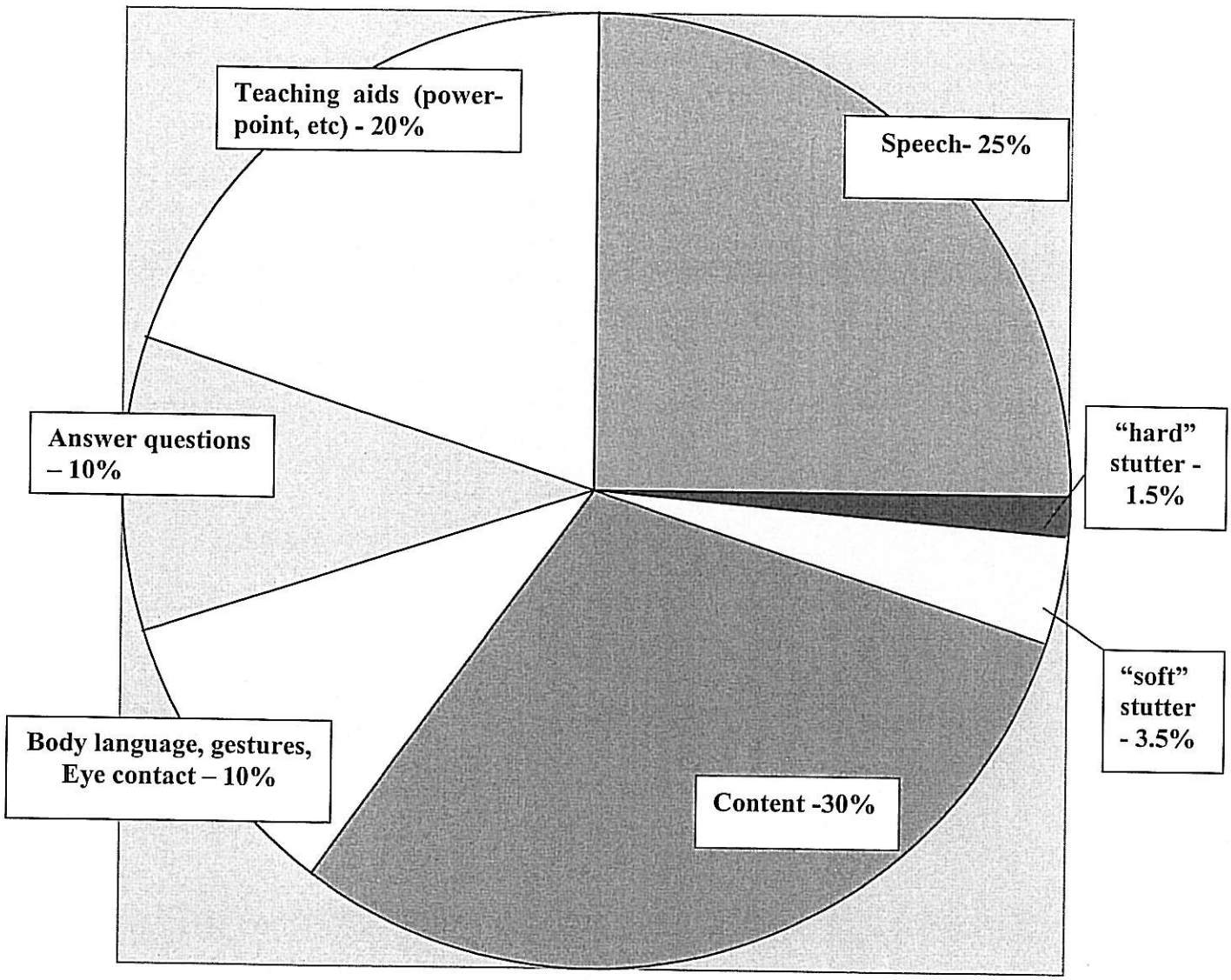
Illustration of Leonard's normal distribution curve



1= Talk
2= Sing
3= Paint/Draw
4= Run

Appendix 4

Illustration of Leonard's presentation circle



Appendix 5

Examples of the therapeutic alliance

Therapeutic alliance (equality)

T: Ok, so where in your body does it feel like your stutter is?
L: Right under my tongue
T: Right under your tongue? Ok, why don't you write that down?
L: (Laughs) I don't know what you want written down
T: Well, there's no template already decided
L: No, but you probably have a better idea about all of this than I do.
T: **You think? I don't even stutter. Besides the question is what you think.**
L: But you're the speech-language pathologist!
T: **That's true, I am the speech-language pathologist. But you're still the one who knows most about yourself and your stutter. It's very individual, completely different from person to person.**
L: What if someone thought their stutter was in their foot!
T: (laughs) Haven't heard that one yet, but you never know…

Therapeutic alliance (willingness to take a confrontation)

L: Then there's the question of what I do too little of. Have to come up with something here. Homework I suppose. My parents always think so…
T: **Yes, but the question isn't what your parents think..**
L: Mm
T: **…It's what *you* think.**
L: (laughs) Mm

Therapeutic alliance (appreciation)

T: Ok, then it's going to be two weeks until next time and then it's going to be every week (hums the Darth Vader soundtrack from Star Wars)
L: (Laughs) kind of
T: (Laughs)
L: No, it's not that terrible to come here
T: You think you'll manage?
L: You think it's all right, right?
T: **I'm having a great time!**
L: And I really don't mind coming either.

Therapeutic alliance (humor)

L: I talked to my spanish teacher a long time ago.
T: And what did you say to her?
L: "I stutter and it's pretty tough for me so is there any way that I could be excused from having to be active during the lessons?" And she said: "sure", and then she came up with the idea that "you can signal when you know the answer but don't want to say it"
T: (laughs) And she's going to check that with you afterwards then?
L: (Laughs) Don't think so! I think that's a great idea, then I can signal that I know the anwer to everything!
T: Exciting. Have you used it yet?
L: (Laughs) not yet. I haven't come up with a good signal
T: (Laughs) eye-blinks maybe, or bird sounds: "kraakraa"
L: (Laughs) Yes! That's so much better than stuttering
T: (Laughs) I know! Nobody's going to think that's the least bit sensational.

Appendix 6

Examples of the treatment structure

Brief update and SA-scale (session 7)

T: **So, how are you doing today?**
L: All right, kind of stressed out. A lot to do in school…
T: Hmm, that's too bad. Hope it'll slow down soon.
L: Mmm, I think this week is the worst one.
T: **Mm, so how bad has your stuttering been since last session, from 1-10?**
L: It's been an 8. At least!
T: An 8! Wow, that's the highest so far. And by that 8, do you mean how often you've stuttered or how bad it's felt when you've stuttered?
L: Both

Review homework (session 6)

T: **So, your homework for last week was to give a presentation in class. How did it go?**
L: Well, Pretty good. I stuttered some, not that much, but some. It only lasted a few minutes, so nothing big and fancy.
T: So how did it feel to stand in front of your class and stutter a few times? Did you feel nervous?
L: I mean, I was a little nervous, as usual. But it wasn't as bad as I thought once I got started.

Bridge from previous session and setting the agenda (session 6)

T: **So, remember this list of problems we talked about last time, problems that the stuttering causes you? Is there anything you would like to add, change or remove from this list?**
L: I'd like to remove the problems!
T: (Laughs) yes! That's a really good idea.
L: (Laughs) I think so too! But no, nothing I want to change or anything.
T: **Ok. Because here is that part about giving a presentation. Is this still something you feel that you would like to work on today, to find a way for you to manage to do it?**
L: Well, it would be good for me to learn how to give a presentation in the long run.
T: And what about these things you win by avoiding them? Not getting embarrassed for example?
L: That's good now, but then I'm screwed when I get older.

Setting new homework (session 6)

T: **Well, if you want to keep eye contact when you stutter then maybe that should be next weeks homework. Let's start with choosing one situation when you can pracice that. Sometime when you stutter quite often?**
L: I always stutter during the breaks.
T: If you try to keep eye contact when you stutter during breaks this week. Do you think you can manage that?
L: I think I'll be able to do that.
T: And does it feel like you will learn something from this homework?
L: I think so. Definitely.

Feedback (session 5)

T: Now I've kept you way too late. Hmm, have to practice keeping track of time.
L: Yay! Finally something I can say on minus!
T: No, that's *my* minus, that's cheating!
L: But can't you let me borrow it?
T: We'll see… **What was most important today?**
L: The roleplay, definitively.
T: Great! That was the first time I tried it.
L: You need to keep doing that, it was good!
T: **Can you tell me something I did well?**
L: The roleplay!
T: (Laughs) you've found yourself a strategy here.
L: (Laughs) yes!
T: **Ok, and minus, something I could have done better or differently?**
L: (Points towards the clock) it wasn't a big minus, but I had to find something.

Appendix 7

Examples of cognitive distortions

Mind reading (session 5)

T: Hmm, what else could you do if someone teases you for your stutter? Didn't you say you'd just left sometime when a friend copied your stutter?
L: Yes
T: Did you come back afterwards?
L: No, I just left. Didn't say anything
T: And do you think it was clear to him why you left if you didn't say anything?
L: I hope so
T: But you're not sure?
L: No, but **I think he knew.**
T: But do you really think he meant to make you angry or upset?
L: I can just imagine so. I don't see any other reason for a person to do that.
T: None at all?
L: Maybe to get the upper hand…
T: Or maybe just like a bad joke, a way to…
L: An extremely bad joke
T: Absolutely, but I just don't think people always think things through completely before…
L: **No, people have a habit of not thinking things through, but I think he thought it through quite well before saying anything.**

Catastrophizing (session 4)

T: **What is the worst thing that could happen during a presentation?**
L: Well, that I stutter, say the wrong things and the entire presentation goes down the drain.
T: Hmm. Goes down the drain. What do you mean by that? That you storm out…?
L: Don't remember what I say, say the wrong things, don't understand what I say, skip forward, jump back, repeat things, you know, chaos!
T: Ok, but it feels like these are two different things, or would the stutter lead to all the other problems?
L: Yes. If I start to stutter it doesn't seem impossible that I would say the wrong thing
T: So stuttering could result in you saying the wrong thing and then it goes on and gets worse? Is that what you mean?
L: Yes. It starts like a snowball and then it gets bigger and bigger and bigger and then- boom!

Should-statement (session 1)

L: Mmm, well, I might be a perfectionist concerning myself…
T: Mmm
L: …**How I *should* be.** But what I do I'm not that perfectionistic about. Now you're writing down that I'm a prefectionist, right? (laughs)
T: Mm, perfectionist concerning what you should be, but not what you do?
L: Or what I am, I mean, **I know I *should* be right, but I'm not right.** Divided worlds.

Examples of identifying, challenging and modifying dysfunctional thoughts

Identifying dysfunctional thoughts (session 8)

T: **Ok, so you think you criticize yourself too much. That it makes you feel bad?**
L: Mm
T: **Ok, can you think about a certain situation when these thoughts are unusually strong? You said you sometimes "feel more stupid than you really are". What would these thoughts sound like?**
L: Hmm, well, I don't usually listen to myself when I think, I just think.
T: That's how it usually is, that's why these thoughts are so hard to get a hold of.
L: Yes, if you're really going to listen to what you think you have to work really hard.
T: I know. That's the tricky part.
L: **I'm trying to form a sentence in my mind of what the thoughts would sound like. I think it's more like "Why can't I do this? I bet my friend would be able to do it!"**
T: Sound like you compare yourself a lot to your friends. That you think that they are extremely talanted in some areas…
L: **Now I automatically thought "unlike me".**
T: No, that's not what I meant
L: Of course you didn't. I understand that, I think.
T: **But good job catching that thought, is that something you think every time someone says something positive about your friends?**
L: No, not always. But quite often I think.

Challenging dysfunctional thoughts (session 8)

T: **So you think he does better in school than you do, and that he's better at giving speeches, but in the end you still wouldn't want to be him. Is the same true for you other friends?**
L: I could imagine to be…no, I couldn't actually. I just remembered that he's not very good at keeping track of things and he's not very mature.
T: Mm
L: Well, no, I suppose I don't really want to be anyone in my group of friends. I mean, I don't want to be any of them, as entire persons, but I wouldn't mind taking little pieces of them (laughs).
T: (Laughts) I bet! Unfortunately that's not the way it works..
L: (Laughs) Unfortunately not.

Modifying dysfunctional thoughts (session 8)

T: Can you think of anything that you could think when you notice that you start to critisize yourself and make unfair comparisons? Is there anything you could use in all of this that we've talked about?
L: Well, point out their weaknesses.
T: How do you mean?
L: Like when I point out that my friend doesn't know anything about computers, and since I spend a lot of time in front of my computer I don't really understand how you can avoid knowing that stuff.
T: That's a good idea. **And what if we were going to try to have this wider perspective and say: "but all these things that he is, and all these things that I am- would I want to change one for the other? Would I want to be him, with everything that includes?"**
L: No, I probably wouldn't
T: Mm, Do you think that's a thought that might…
L: The thought that I'm content with the way I am?
T: If that's the way you feel. Is it?
L: If I think about them like entire persons and not just the small abilites that they have, then I think I'm content with the way I am.
T: **So do you think that's a thought that might help?**
L: Yes I do
T: **Do you think you'll be able to stop when you notice that you are criticizing yourself?**
L: I think so
T: **And what are you going to think then?**
L: Hmm, point out their faults, think back at what I can do better than them. Yes, and think that I wouldn't want to be them at any cost. I really wouldn't.

Examples of CBT interventions

Challenge rash conclusions (session 3)

T: **How hard do you think it would be for you to give presentations if you didn't stutter?**
L: Not bad at all. I've played the trumpet for seven years, which means I've played at lots of concerts, in front of lots of people, and it's never been a problem for me.
T: **Ok, but don't you think there's a pretty big difference there? I can imagine that there are professional musicians who still think it's hard to talk in front of people even thought they have no problem playing in front of them.**
L: Im sure there are. I'm thinking of my trumpet teacher. He hates talking in front of people.
T: Even though he can play in front of people without any problem?
L: Mm
T: **So it might not be impossible that you would think it was hard to give presentations if you didn't stutter, even though you don't mind playing the trumpet in front of people?**
L: I suppose so. Yes, it might still be pretty hard.

Change perspective (session 4)

T: But ok. So out of these 5% that stuttering occupies on your "presentation circle" it's these 30%, the hard stutter, that's the worst? (see appendix 4)
L: Yes
T: **Ok, So then we have an even smaller part. This part..** (draws on the presentation circle)
L: (Laughs)
T:**...that is the bad stutter, or the worst stutter.**
L: Hmm, yes, it doesn't look like that much now...

Explore idiosyncratic meaning (session 1)

T: **When you say that there's something "wrong" with you, what do you mean by that?**
L: Well, it depends. It's not right to stutter. If you think of an entirely healthy human and then you compare with me then I evidently have some fault, right? I mean, its wrong to stutter really, there's something that's wrong, right? Or did I just imagine all of this?
T: I mean, you could say that there is something that doesn't work optimally with your speech.
L: Yes, then there's something that's wrong, and it's a fault that can surely be fixed in some way.

Role play (session 5)

T: What else can you do if someone starts to tease you when you give a presentation? You said that you could ignore the person, right?
L: Yes
T: Ok, let's try that:
"and this this bus goes th-th-th-th-three...."
L: "Ops, there's something wrong again! Can't you talk or what?"
T: (Goes on with the presentation)
How did that feel on your side?
L: I mean, in the persons defense, although it's a stupid defense, it could be a guy-comment, you know something you throw out there to tease the person, even though you don't really mean it.

Appendix 10

Occasion	*1*	*2*	*3*	*4*	*5*
Stuttering behaviors					
Frequency of stuttering	5	3	4	3	4
Physical struggle during stutters	5	4	5	3	6
Duration of stutters	4	3	4	4	5
Uncontrollable stutters	7	7	7	7	7
Urgency/fast speech rate	5	1	4	4	6
Associated facial/body movements	7	5	6	5	7
General level of physical tension	5	3	5	3	4
Loss of eye contact	6	7	7	7	7
Average	***5.5***	***4.1***	***5.3***	***4.5***	***5.8***
Thoughts about stuttering					
Negative thoughts before speaking	6	4	5	4	4
Negative thoughts during speaking	3	2	2	2	3
Negative thoughts after speaking	6	5	5	4	4
Average	***5***	***3.7***	***4***	***3.3***	***3.7***
Feelings about stuttering					
Frustration	4	3	4	2	4
Embarrassment	6	4	5	4	4
Fear	5	3	4	3	3
Anger	2	2	2	1	2
Helplessness	5	3	4	3	3
Average	***4.4***	***3***	***3.8***	***2.6***	***3.2***
Avoidance due to stuttering					
Of words	5	3	4	3	3
Of situations	5	3	3	2	3
Of talking about stuttering with others	3	1	1	1	1
Of admitting the problem to yourself	1	2	2	3	1
Average	***3.5***	***2.3***	***2.5***	***2.3***	***2.0***
Disadvantage due to stuttering					
At home	4	2	3	2	2
Socially	5	4	5	3	3
Educationally	6	4	5	4	4
At work *(Not applicable)*					
Average	***5***	***3.3***	***4.3***	***3***	***3***