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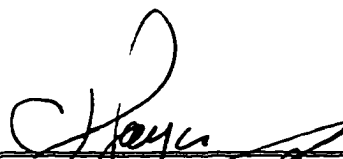


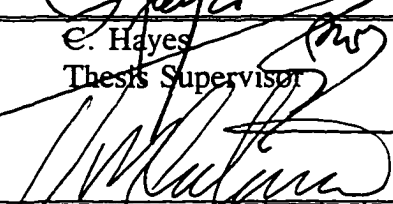
**THE EFFICACY OF HAYES ANXIETY RELIEF TECHNIQUE  
VERSUS THE SELF CONTROL TRIAD IN THE  
TREATMENT OF PUBLIC SPEAKING ANXIETY**

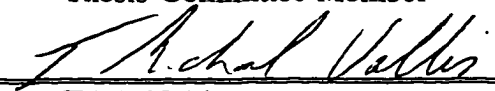
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A Thesis Submitted in Partial Fulfillment of the Requirements for the  
Degree of Master of Science in Applied Psychology (Clinical)

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## ABSTRACT

### THE EFFICACY OF HAYES ANXIETY RELIEF TECHNIQUE VERSUS THE SELF CONTROL TRIAD IN THE TREATMENT OF PUBLIC SPEAKING ANXIETY

Charmaine Stevens

March 19, 1997

Social phobia is the third most common mental disorder among adults. The purpose of this study was to compare the efficacy of Hayes Anxiety Relief Technique (HART), a behavioural technique which employs in vivo exposure and a procedure developed to help manage anxiety, with The Self Control Triad (SCT), an imagery based covert conditioning technique, in the treatment of social phobia, specifically public speaking anxiety. Forty-two undergraduates from Saint Mary's University in Halifax, Nova Scotia voluntarily participated. The participants were screened using

the ADIS-IV then randomly assigned to either the HART, SCT or Control groups.

The pretreatment session consisted of the administration of behavioural, cognitive and subjective measures of anxiety. Treatment sessions were conducted for one hour a week for three weeks. Post treatment measures were administered within one week of the end of treatment. The results showed that only the HART groups were significant statistically and improved the most clinically.

## **The Efficacy of Hayes Anxiety Relief Technique vs The Self Control Triad in the Treatment of Public Speaking Anxiety**

Anxiety disorders such as panic disorder, specific phobias, social phobia, and post traumatic stress disorder comprise the most common mental health problem in our society today (Barlow,1988). For instance, over eighty million anxiolytic prescriptions are written yearly in the United States (Warren & Zgourdes, 1990). Phobias, which are persistent, irrational, fears of a specific object or situation and involve the compelling desire to avoid that object or situation, alone account for the most frequent mental health disorder in women and the second most frequent in men (Barlow,1988; Kuch & Swinson,1989). It is estimated that between five and ten percent of the population in the U.S. have specific fears significant enough to be diagnosed as a phobia (Myers, Weissman, Tischler, Holzer, Leaf, Orvaschell, Anthony, Boyd, Burke, Kramer, & Stoltzman, 1984).

Social phobia is an anxiety disorder characterized by a persistent fear, avoidance, and anxious anticipation of social or performance situations. The term "social phobia" was first used by Janet (1903) to describe patients who were afraid to be watched while writing or playing an instrument (Heckelman & Schneier,1995). Often called the "neglected anxiety disorder," social phobia attracted very little research interest until the mid 1980's (Heimberg,1994).

Current data on adult social phobia shows a prevalence rate of 13.3% for the general adult population and establishes social phobia as the third most common

Eshelman, Wittchen, & Kendler, 1994). Published reports of samples of social phobia in youth refer to both child and adolescent patients combined. The base rates for these patients receiving a DSM-III-R diagnosis of social phobia range from 9% to 17.9% (Albano, DiBartolo, Heimberg, & Barlow, 1995).

During the past twenty years there has been a significant increase in interest in anxiety disorders (Warren & Zgourdes, 1991). This increase in interest has been partly due to the redefining of anxiety disorders by the American Psychiatric Association. The inception of the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III), radically changed the classification of anxiety disorders (Beidel & Turner, 1991). The descriptions and criteria for diagnosing anxiety disorders were made more precise, and distinct diagnostic categories such as agoraphobia, social phobia, panic disorder, and generalized anxiety disorder were introduced (Beidel & Turner, 1991). Another factor that has contributed to an increase in research in anxiety disorders is the development and improvement of cognitive and behavioral interventions such as imagery desensitization and in vivo exposure as well as the development of panic-blocking medications.

The treatment modality of choice for social phobia is a subject of much debate (Newman, Hofman, Trabert, Roth, Taylor, 1994; Heimberg, Becker, Goldfinger, Vermilyea, 1985). Research has suggested that cognitions play a more integral role in social phobia than in other anxiety disorders (Butler, 1985; Beidel, Turner, & Dancu, 1985), and therefore, the use of cognitive-behavioral techniques has increased as the

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treatment of choice (Heimberg, Dodge, Hope, Kennedy, Zollo, & Becker, 1990; Mattick & Peters, 1988, Butler, 1985). Other studies have suggested that cognitive therapies did not enhance the effectiveness of behavioral therapy for social phobia (Gelernter, Uhde, Cimboic, Arnkoff, Vittone, Tancer, Bartko, 1991; Biron, Augusto, & Wilson, 1981). The most effective behavioral treatment for social phobia has been found to be in vivo exposure, although results have not been consistent across studies (Stern & Marks, 1973; Chaplin & Levine, 1980; Emmelkamp, 1982; Matthews, Gelden & Johnston, 1982, Donohue, Van Hasselt, & Hersen, 1994). Research has suggested that behavioral treatments alone may influence cognitive factors (Newman et al, 1994; Gelertner et al, 1991; Mattick & Peters, 1988). Using behavioral techniques, clinically significant improvement usually occurs in 65-75% of social phobics (Ost, 1989).

### **Clinical versus statistical significance**

One problem that has been encountered in clinical outcome research is that various outcome measures used in a study may reach statistical significance but may not be relevant clinically. There are two problems associated with evaluating treatment efficacy using statistical significance alone. First, the comparisons made are based on an improvement score for all subjects and do not give any information on the individual participants in the study (Jacobson, Follette, & Revenstorf, 1984; Barlow, 1980, 1981; Garfield, 1981; Hugdahl & Ost, 1981; Kazdin, 1977). Secondly, treatment effects which are inferred on the basis of statistical significance alone may have very

little clinical relevance (Jacobson et al, 1984; Jacobson & Truax,1991). For example, a few points change between pre and post test of a measure may reach statistical significance but may not be indicative of a noticeable behavioral change. In order to assess whether or not this change is clinically reliable, Jacobson et al (1984) proposed using a procedure they called a Reliable Change Index (RC). This index is equivalent to the difference score (pre-post) divided by the standard error of measurement. An RC larger than  $\pm 1.96$  would be unlikely to happen ( $p < .05$ ) if the posttest score was not actually reflecting real change. As well as using the RC index, Jacobson et al (1984) also suggested that clinically significant change had something to do with a return to normal functioning. They operationalized this concept in three ways: a) the level of functioning after therapy should be beyond the range of the dysfunctional population, the definition of range being two standard deviations beyond (in the direction of functionality) the mean of that population; b) the level of functioning after therapy should be within the range of the functional population or within two standard deviations of the mean of that population; c) the level of functioning after therapy puts the participant closer to the mean of the functional rather than dysfunctional population. To use either *b* or *c* would require the use of norms for both a non-clinical as well as clinical population for the measures being analyzed. When norms are not available for both populations, which occurs very frequently, criterion *a* is the only cutoff point available (Jacobson & Truax,1991). This is the most stringent of the three methods.



### The nature of anxiety

Understanding what anxiety is and when it becomes a problem has not been an easy task. The word anxiety has been in use since the 1500's. It is derived from the Latin word "*anxius*" which means a state of distress and agitation (Bourne, 1990). Semantic differences in translation from different languages has led to a variety of definitions for anxiety. For instance, the German word "*angst*" means agony, dread, and fear, whereas the English equivalent would be edgy, uneasy, or frightened (Taylor & Arnow, 1988). Beck (1976) used the word "fear" to denote the cognitive-behavioral component of the response to perceived danger. Anxiety is a signal of impending danger that allows a person to prepare to deal with something that is frightening. Fear on the other hand is also a warning signal but it differs from anxiety in that it is a response to a threat that can be identified (Kaplin & Saddock, 1991).

Anxiety is an emotion that is universal in nature (Taylor & Arnow, 1988). It is often not easy to distinguish between normal and pathological anxiety. Normal anxiety is a highly unpleasant subjective state of apprehension that is accompanied by physiological, behavioral, and cognitive reactions that occur simultaneously (Barlow, 1988). For example, physiologically, common symptoms may include shortness of breath, increased heart rate, perspiration, and dryness of the mouth. Behaviorally the person may appear restless and ill at ease. Cognitive symptoms may include worrying about events happening that may be dangerous to oneself or others (Beidel & Turner, 1991). People who experience these symptoms may realize that these fears

are out of proportion with the probability that such events will occur. This realization however does little to alleviate their emotional state (Bourne, 1990; Kaplin & Saddock, 1991, Beidel & Turner, 1991).

As an alerting signal, low levels of anxiety may warn of external or internal threats to the person that can range from dodging a ball thrown at one's head, to separation from loved ones. In these circumstances, anxiety plays the role of prompting the person to take whatever steps are necessary to prevent or lessen the consequences of a particular circumstance (Kaplin & Saddock, 1991).

### **Diagnostic Issues**

Distinguishing between clinical anxiety and everyday anxiety is sometimes difficult. Usually the distinction between "normal" and "pathological" anxiety is determined by how the anxiety affects the person's ability to function, the frequency and intensity of the symptoms; if they have sought treatment; or if they are engaging in self-destructive behavior (Taylor & Arnow, 1988). The Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) of the American Psychiatric Association (1994), classifies anxiety disorders as mental disorders instead of syndromes or clusters of symptoms. Specific criteria must be met before a person is diagnosed with an anxiety disorder. Anxiety becomes clinically significant and is usually diagnosed as a disorder when it becomes chronic, intense, and debilitating (Warren & Zgourdes, 1991; Taylor & Arnow, 1988). For example, when the anxiety interferes with a person's everyday functioning, such as often happens with a person

who suffers from social phobia. In this instance, the person avoids (or endures with intense distress and anxiety) the feared situation. The person repeatedly fears at least one social or performance situation where they are being watched or evaluated and specifically fears showing symptoms of anxiety that others will notice (American Psychiatric Association, 1994). By avoiding these situations, the feelings of excessive and unreasonable fear and anxiety that these situations may provoke as well as any humiliation and embarrassment is avoided (American Psychiatric Association, 1994). This avoidance behavior significantly disrupts the persons' normal routine, their functioning at work, personal relationships, academic or career advancement and social activities (Beidel, Turner, & Dancu, 1985). As well, socially anxious people may resort to alcohol and substance abuse to cope with their anxiety adding to the impairment of the individuals functioning (Beidel et al, 1995). Substance abuse or another medical condition, however, should not be a direct cause of the symptoms of social phobia (American Psychiatric Association, 1994).

Until 1980, all phobias had been grouped together in the DSM-I and DSM-II. It wasn't until the research of Marks and Gelder (1966) was published that it was established that different phobias could be distinguished by different characteristics. The core feature of social phobia being that the person had an excessive fear of being observed in a performance situation such as public speaking, writing in front of people, using a public washroom, eating or drinking in public, going to parties, meetings, and speaking to people in positions of authority (Heckleman & Schneier, 1995). The most commonly feared social situation has been found to be

public speaking (Holt, Heimberg, Hope, & Leibowitz, 1992; Schneier, Johnson, Hornig, Leibowitz, & Weismann, 1992; Turner, Beidel, & Townsley, 1992).

As more research was done on social phobia, two subtypes of the disorder were identified, a generalized social phobia where the person has a fear of most social situations and an unnamed subtype which has more recently been referred to as "nongeneralized", "discrete", "specific" or "performance" (Henklemann & Schneier, 1995). It became apparent that this distinction was necessary as research showed that there were groups of subjects who avoided and were afraid of specific social situations (McNeil & Lewin, 1995). This distinction has been partially validated as it has been found that there are differences in social and family background, degree of impairment and severity, demographics, and different responses to medications and therapy between generalized and nongeneralized social phobics (Heimberg, Holt, Schneier, Spitzer, & Liebowitz, 1993). For example, research has shown that people who fear public speaking (nongeneralized) experience less disruption or impairment in their lives than generalized social phobics do and may also report less anxiety in other social situations (Heckleman & Schneier, 1995; Heimberg, Hope, Dodge, Becker, 1990).

### **Differential diagnosis and comorbidity**

As well as making a distinction between the two subtypes of social phobia, it is also important to differentiate social phobia from other mental disorders which have similar symptoms and may co-occur with social phobia. The disorders with the

highest lifetime prevalence rate of comorbidity with social phobia have been found to be simple phobia (59%), agoraphobia (45%), alcohol abuse (19%), major depression (17%), and drug abuse (13%) (Heckleman & Schneier, 1995).

Results from recent studies have demonstrated a high rate of comorbidity as well between Avoidant Personality Disorder and generalized Social Phobia (50-89%) and lower rates (21-23%) with discrete Social Phobia (Herbert, Hope & Bellack, 1992; Holt, Heimberg, & Hope, 1992; Schneier, Spitzer, Gibbon, Fyer, & Leibowitz, 1991). These high rates of comorbidity have resulted in researchers questioning the validity of having two distinct diagnostic categories for Avoidant Personality Disorder and Social Phobia. It has been suggested that Avoidant Personality Disorder may identify a more severe subgroup of generalized social phobia, however, recent studies have not been able to answer this question (Herbert et al, 1992; Schneier et al, 1991).

### **Demographic factors**

#### **Age at onset**

The mean age of onset has been reported as being mid to late teens, however social phobics (47%) have reported having symptoms before the age of ten (Schneier et al, 1992).

Developmentally it can be argued that symptoms of social phobia can not occur until children are aware of themselves and others as objects of evaluation. It has been found that children are aware of negative evaluation at around eight years of age (Crozier & Burnham, 1990) and that most children are capable of feeling embarrassed

by the age of three (Lewis, Stranger, Sullivan, & Barone, 1991).

The mean age of presentation seems to be about 30 years old which means that social phobics don't seek help until 15 to 25 years after symptoms have been experienced (Solyom, Ledwidge, & Solyom, 1986).

The course of Social Phobia seems to be continuous and lifelong and the severity of the disorder may depend upon the life stressors and demands the person experiences (Rapee & Barlow, 1993). The severity of fear experienced during public speaking for example, may be influenced by moderating variables such as the size, gender, and social status of the audience and how formal the situation is. There is limited data on the effects of these variables, however, what data exists suggests that social phobics are more likely to be distressed and exhibit avoidance behaviour in situations which are formal and involve interaction with the opposite sex (Turner, Beidel, Dancu & Keyes, 1986; Dodge, Heimberg, Nyman & O'Brian, 1987).

### **Gender factors**

In contrast to other anxiety disorders where females are the predominant presenters, clinical data shows that there is an equal distribution of males and females presenting with Social Phobia or even in some cases a slightly higher number of males seeking treatment (Solyum et al, 1986). However it has been found that more females (2:1) meet the DSM-IV criteria for Social Phobia and are more likely to report social anxiety than are males (Schneier et al, 1992).

**Sociodemographic factors**

Social phobia has been found to be more common in young, unmarried, poorly educated females of low socioeconomic status (Schneier et al, 1992). These findings are consistent with research on other mental disorders which implicate the same factors. For example the inverse relationship between schizophrenia and sociodemographic factors in social-epidemiological research is well known (Leaf, Weismann, Myers, Holzer, Tischler, 1984). Explaining this association in social phobia is not easy. It is possible that the impairment which the person suffers due to social phobia, both educationally (e.g. inability to finish university due to a speaking phobia) and occupationally may be reasons for low socioeconomic status (Dohrenwend, Levav, Shrout, Schwartz, Naveh, Link, 1992).

The origins, development, and maintenance of anxiety have been topics that have preoccupied many notable clinical researchers during the twentieth century (Taylor & Arnou, 1988). As well, people who suffer from anxiety disorders naturally wonder why they have them. Although learning about possible causes of anxiety disorders gives the person insight to the problem, it is not a cure. There are multiple factors in the origins of the various anxiety disorders and removing only one factor will not necessarily eliminate the problem. Trying to account for the many facets of anxiety using a "one-factor" explanation tends to oversimplify the problem. Anxiety can be caused by several factors such as biology, conditioning, heredity, self-talk, and an individual's personal belief system (Bourne, 1990).

## **Theories of Anxiety**

### **Biological Theory**

Neurophysiological based theories of anxiety usually examine the effects of different combinations of neurochemicals and neurohormones within different areas of the brain that are thought to be involved with anxiety (Kaplin & Sadock, 1990; Turner & Arnow, 1988). Often the brain functions of individuals with an anxiety disorder are compared to individuals without a disorder. It has been hypothesized that certain individuals may be especially predisposed to developing an anxiety disorder because of a biologically based sensitivity to anxiety (Kaplin & Sadock, 1990).

Although some neuroanatomical structures and systems hypothesized to be involved with anxiety have been identified, exactly which ones are responsible for the different aspects of anxiety are not clear (Taylor & Arnow, 1988).

It has been postulated that the Locus Coeruleus (LC) which is part of the noradrenergic system, is an important site in relation to anxiety, particularly in the triggering of panic attacks (Bourne, 1990; Redmond, Huang, Snyder, & Maas, 1976). The function of the LC is to act as a relay center for "warnings" or "alarms" which can vary between normal attention to new stimuli or terror and panic depending on the level of activation of the LC. During animal experiments, when the LC was stimulated, the animals exhibited panic attacks which were similar to humans (Bourne, 1990; Taylor & Arnow, 1988). It was once speculated that an excess of the neurotransmitter norepinephrine at the site of the LC caused panic, however the consensus appears to be now that a disruption in the functioning of the LC and



perhaps the entire noradrenergic system may be the underlying cause. It has been found that people who suffer from anxiety and panic attacks have an LC which is overly labile and prone to higher levels of stimulation than people who do not suffer from panic attacks (Bourne,1990).

The limbic system is a deep structure of the brain which is thought to be involved with the emotional components of fear and anxiety (Kaplin & Sadock,1990; Taylor & Arnow,1988). This system includes the hypothalamus, septum, hippocampus, amygdala, and cingulum. The limbic system receives input from the locus coeruleus. Ablation of the limbic system and temporal cortex results in reduced levels of fear and aggression. In contrast, the stimulation of this region results in expression of this behaviour (Taylor & Arnow, 1988). One area of the limbic system which has received particular attention is the septohippocampal pathway. It has been hypothesized that an increase in the activity of the septohippocampal pathway results in anxiety (Kaplin & Sadock, 1990).

The benzodiazapine receptor system has also been implicated in the origin of anxiety. This system has been found to be sensitive to benzodiazepine drugs such as diazepam (Valium), chlordiazepoxide (Librium), and lorazepam (Ativan) which have been found useful in reducing generalized anxiety as well as anticipatory anxiety associated with phobic disorders (Bourne, 1990). The theory is that the brain produces benzodiazapine-like substances and that a deficit of these substances may be responsible for feelings of anxiety, thus far however, nothing is known for certain (Bourne,1990). Studies have shown that a neurotransmitter called gamma amino

butyric acid (GABA) enhances the action of benzodiazapine. When GABA is administered to an individual, the increase in GABA results in a decrease in anxiety. Conversely, when GABA inhibiting drugs are used, there is an increase in anxiety (Kaplin & Sadock, 1990; Taylor & Arnow, 1988).

For social phobia in particular, it has been suggested that the functioning of the dopaminergic neurotransmitter receptor system may be involved. An unusually high rate of social phobia has been found in patients with Parkinson's disease (Stein, Heuser, Juncos, & Uhde, 1990). In Parkinson's disease, there is a decrease in dopamine levels. Stein et al (1990) found that 38% of the people in their study with Parkinson's disease met the criteria for an anxiety disorder, 17% met the criteria for social phobia. Research in this area is very limited however and further testing is needed.

Studies looking into the neurophysiological causes of anxiety are still tentative, hypothetical, and not complete (Bourne, 1990; Taylor & Arnow, 1988). What is better understood however is the physiology of a panic attack which is a component of several of the anxiety disorders such as Panic Disorder, Social Phobia, and Specific Phobia (American Psychiatric Association, 1994).

A panic attack is described as a period of intense fear, terror, and apprehension which occurs suddenly without warning and for no reason (Hoehn-Saric & McCleod, 1988). The DSM-IV criteria for a panic attack stipulates that along with the sudden rush of fear and impending doom, four or more of the following symptoms should start abruptly and peak within ten minutes:

- 1) palpitations, pounding heart, or accelerated heart rate
- 2) sweating
- 3) trembling or shaking
- 4) sensations of shortness of breath
- 5) feeling of choking
- 6) chest pain
- 7) nausea or abdominal distress
- 8) dizziness, lightheadedness
- 9) feelings of unreality
- 10) fear of losing control
- 11) fear of dying
- 12) numbness or tingling sensations
- 13) chills or hot flashes

Walter Canon (1932) was one of the first to study what we now know as a "fight-or flight" reaction to any type of threat. This immediate response enables animals and humans to cope with threats to survival. The alarm response can be elicited by either physical or psychological threats (Bourne,1990). A panic attack is an extreme alarm reaction to a perceived or non-perceived threat. A panic attack may have a sudden onset with no provocation. The natural fight or flight response in this instance has gotten out of control (Bourne,1990).

Physiologically during a panic attack, the sympathetic nervous system puts into rapid motion several bodily reactions. Large amounts of adrenalin are released which

may cause feelings of dread and terror. As well the heart starts racing, respiration becomes rapid and shallow, there may be profuse sweating, cold hands and feet, trembling and shaking, contractions in the chest and throat, and feelings of not being able to breathe (Bourne,1990). In Social Phobia, panic attacks are usually provoked when the person is exposed to the feared situation (American Psychiatric Association, 1994).

### **Medical Conditions**

In some instances, anxiety and panic may be attributed to certain medical conditions (Twerski,1988; Bourne,1990). The most frequent medical causes are 1)hyperthyroidism - an excess or sudden fluctuations of the thyroid hormone may result in symptoms of anxiety such as rapid heartbeat, sweating, and generalized anxiety; 2) Hypoglycemia - when an individual's blood sugar levels are too low, the person may experience something similar to a panic attack. Symptoms include anxiety, shakiness, dizziness, weakness, and disorientation; 3) Mitral valve prolapse - a slight defect in a valve in the left side of the heart causes palpitations which may cause some individuals to panic. This condition has been found to occur more frequently in people with panic disorder than in people without; 4)Hyperventilation - rapid, shallow breathing sometimes lowers the level of carbon dioxide in the system which may result in such symptoms as light-headedness, dizziness, trembling, tingling in the hands and feet, and shortness of breath. The person may interpret these symptoms as dangerous and have a panic attack (Twerski,1988; Bourne,1990).

### Genetic

There is some evidence to suggest that anxiety disorders may be partly inherited. Family studies have shown that there is an increased risk for first-degree relatives of people with an anxiety disorder to develop an anxiety related disorder. Noyes, Crowe, Harris, McChesney, & Chaudry (1986) found that the morbidity risk among relatives of agoraphobic clients was 8.6% for agoraphobia, 7.7% for panic disorder, and 31.7% for all anxiety disorders. Data for social phobia in this area indicate that the rates of social phobia in first-degree relatives of social phobics are three times that of relatives of control subjects who did not have social phobia (Reich & Yates, 1988; Fyer, Mannuzza, Chapman, Leibowitz, & Klien, 1993). In studies of identical twins, it has been found that if one twin has an anxiety disorder, the probability that the other twin may develop an anxiety disorder is between 31% and 88%. In studies of fraternal twins, the probability ranges from 0% to 38% (Bourne, 1990; Beidel & Turner, 1991). At this time it is not quite evident what exactly is inherited but it is hypothesized that it may be a general personality type that is more reactive and sensitive to threatening stimuli which may predispose the person to becoming overly anxious. Whether or not the person develops an anxiety disorder may also depend upon other factors such as environment and conditioning (Bourne, 1990).

Very little data is available for social phobia, however, Kendler, Neale, Kessler, Heath, and Eaves (1992) found that in 2,163 female pairs of twins, there was a 24.4% concordance rate for social phobia in monozygotic twins versus 15.3% for dizygotic twins.

**Behavioural Theories**

During the first part of this century, learning theories focused mainly on how anxiety, fears, and phobias were acquired. Within the last two decades, behaviourists have incorporated a cognitive component as well to attempt to explain the many facets of anxiety (Taylor & Arnow, 1988).

Watson & Morgan (1917) who were influenced by Pavlov's (1927) classical conditioning theory, argued that anxiety, fears, and phobias were conditioned responses. Unconditioned stimuli (UCS) such as the sight of a fearful object can produce an unconditional response (UCR) or anxiety. They argued that if a conditioned stimulus (CS) was frequently paired with a UCS, then after a period of time the CS presented alone would elicit the UCR or anxiety.

Not everyone agreed that this theory could account entirely for the acquisition of fears as many traumatic events did not develop conditioned responses (Taylor & Arnow, 1988). Mowrer (1939) and Dollard and Millar (1950) developed a "two-factor" theory which hypothesized that fear is first of all classically conditioned. Then the stimuli which are associated with the fear motivate the individual to try and reduce the fear. Therefore, any behaviour such as avoidance of the feared stimuli which reduces the fear become reinforcing and maintains the avoidance behaviour and in turn the fear.

Social phobia is believed to develop in much the same way as many specific phobias. Whether or not a person developed a specific or social phobia would depend upon the nature of the CS, for example, if the CS were a social situation such as

public speaking or a specific stimuli like snakes (Mineka & Zinbarg 1995). As well, the UCS may be different for social phobias versus specific phobias. The UCS for social phobia would involve conditioning fear in a situation where the person experienced defeat, humiliation, or criticism. Specific phobias involve the person's perception of being in physical danger like being bitten by a snake (Mineka & Zinbarg, 1991).

Rachman (1977) proposed a three-factor theory of fear. He argued that there are three types of learning which could lead to fear and phobias: conditioning (as described previously), vicarious learning, for example, by seeing a traumatic event, and verbal information, for example, hearing about the dangers of the objects or situations. Although vicarious learning has not actually included the learning of social fears, it has been suggested that this could happen. For instance, children may observe their parents behaving submissively after a defeat of some kind and learn to fear defeat or failure therefore acquiring submissive behaviours (Mineka & Zinbarg, 1991).

Another perspective of the conditioning model is the preparedness theory of phobias. The premise is that humans as well as non-human primates are evolutionarily predisposed to acquiring phobias to objects or situations which may have threatened our ancestors (Seligman, 1971). Ohman and Dimberg (1978) extended this theory to social phobias with a hypothesis that social fears are a by-product of dominance hierarchies. These hierarchies are a means by which animals that live in groups establish order to their social life. Often involved are ritualized displays of threats by

a dominant animal and submissiveness by another animal. Facial expressions are a major component of this theory where the dominant animal would display angry facial expressions and the submissive animal would display fear grimaces (Ohman & Dimberg, 1978). Animals learn to fear facial expressions which mean danger, such as an angry face, especially when the angry gaze is directed at the individual. In humans, staring promotes escape behaviour as well as avoidance of eye contact which is a submissive behaviour, both of which are common behaviours in social phobia (Ohman, Dimberg & Ost, 1985).

#### **Moderating variables of learned fear**

A person's perception of control over a situation may moderate the intensity of fear and be a factor in the maintenance of submissive, unassertive behaviours in social phobias. There is some data which suggests that social phobia is connected to a diminished sense of control in social interactions as well as the belief that the control of important events, especially traumatic ones, are in the hands of other people (Cloutre, Heimberg, Leibowitz, & Gitow, 1992).

#### **Cognitive Theories**

In recent years the trend in behaviour therapy of anxiety disorders has been to include a cognitive component (Taylor & Arnow, 1988). Beck (1976) suggested that individuals with anxiety disorders tend to 1) overestimate the danger of a situation, 2) overestimate the probability of being harmed in a particular situation;



3) underestimate their abilities to cope with perceived threatening situations which may threaten them physically and/or psychologically; 4) underestimate what other people can do to help. Social phobics have a strong desire to make good impressions upon others, however they are very insecure about their ability to do so (Clark & Wells, 1995). The social phobic has the belief that they will behave ineptly in the situation they fear which will have disastrous consequences such as rejection, loss of self-worth, and loss of status (Clark & Wells, 1995).

### **Maintenance of social anxiety**

When a social phobic enters a feared situation where they think that they will be negatively evaluated, their attention or focus shifts to monitoring and observing themselves. The result is an increased awareness of the anxiety responses they fear which distracts them from noticing how other people really are behaving toward them. For example maintaining eye contact while speaking to others and disclosing personal information, are too threatening for social phobics as it increases the risk of someone evaluating them negatively (Clark & Wells, 1995). Social phobics believe that how they perceive themselves is how others must perceive them.

Beck describes two kinds of thinking - negative automatic thoughts and dysfunctional beliefs and rules. Negative automatic thoughts are unreasonable, dysfunctional and repetitive, but to the individual they are logical and accepted without question (Beck, Rush, Shaw, & Emery, 1979). For example a person with a social phobia may automatically think "They think I am boring" while talking to

others. The other kind of thinking Beck identified was dysfunctional assumptions and beliefs individuals have about themselves and the world. In the example above, the individual makes this interpretation because they equate self-worth with the dysfunctional belief that unless everyone likes them, they are worthless (Beck et al,1979).

More recently Beck and Emery (1985) have hypothesized that dysfunctional beliefs and rules are associated within memory to form "cognitive schemas". Some schemas are more specific, that is they relate to a particular situation, whereas others are more encompassing in nature. Either type serve to process information which is consistent with the schema and ignore inconsistent information (Beck & Emery,1985). For example, social phobics often ruminate about past failures and rejection in particular social situations such as public speaking and will predict future performance by these experiences and again avoid these situations (Clark & Wells, 1995).

Another model, not purely cognitive in nature, which attempts to explain anxiety is the "fear of fear" model (Goldstein & Chambliss, 1978). In this model, individuals who have experienced panic attacks before, may through a process called interoceptive conditioning, learn to fear any physiological cues which could signal the beginning of a panic attack. Therefore any physiological sensation becomes a conditioned stimulus which in turn triggers fear and worry about having a panic attack (Goldstein & Chambliss, 1978). For example, anxiety may produce blushing, sweating, an unsteady voice, dizziness, breathlessness and heart palpitations which social phobics fear others will notice. The social phobic believes this would result in a

negative evaluation by others and avoids situations which may produce these symptoms (Clark & Wells, 1995).

When considered as a group, each of these models has something to contribute to the explanation of how social phobia may develop and as well serve as the basis for the development of treatments. The next section will examine some of the interventions which may be used for social phobia.

### **Behavioural Therapy for Anxiety**

One of many methods used to treat anxiety-based maladaptive behaviours is systematic desensitization (Wolpe, 1990; Kazdin, 1978). The roots of this technique can be traced back to the experimental laboratory (Kazdin, 1978, Wolpe, 1990).

Mary Cover Jones (1924) during her studies on fear reactions in children, tried several methods to eliminate these fears. The two methods which were found to be the most effective were "direct conditioning" and "social imitation". In "direct conditioning", an object which elicited a fear reaction from a child was associated with a stimulus which would elicit a positive reaction. Hunger was found to be the most effective stimulus in conditioning a positive reaction. A feared object would be gradually brought nearer and nearer to the subject while eating until eventually it was close enough to touch. The second method, "social imitation", involved having a child who was afraid of a certain object, watch other children play with that object and then imitate that behaviour thereby overcoming the fear (Jones, 1924). Today, this observation of learning might be termed modeling.

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During the 1950's, Wolpe expanded upon this concept in treating neurotic individuals. Wolpe wanted to find human responses that would be reciprocally inhibiting, or incompatible with anxiety and that could be used in therapy (Wolpe,1990). The turning point came when Wolpe came across a technique called progressive relaxation (Jacobson,1938). Jacobson described how he had used a relaxation procedure to reduce tension in a wide range of disorders such as phobias, generalized anxiety and depression (Jacobson, 1938). This procedure was very lengthy as it usually required between 100 and 200 sessions of intensive and long training in how to relax the various muscle groups of the body (Jacobson,1938). Wolpe realized however, that there were anxiety-inhibiting effects in this technique and in order to use it in therapy he modified it so it could be taught to a client in about six to ten sessions (Wolpe, 1958).

The final step in formalizing the technique of reciprocal inhibition was to introduce an actual feared object into therapy. The hierarchy of situations which were used previously in animal experiments were now modified to use with humans. At first, Wolpe exposed his clients in vivo, in real life to the feared or anxiety producing situation. This was found to be too difficult so the possibility of using imagery or imagining these feared situation or objects was considered (Wolpe,1958). Wolpe had his clients rank in descending order a heirarchy of anxiety provoking situations. Then once the client was relaxed they would imagine the first situation of the hierarchy which elicited relatively low anxiety. Once they could imagine that situation without experiencing anxiety, the next step in the heirarchy was imagined and so on until the

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final step of the hierarchy could also be imagined with no anxiety (Wolpe,1958).

These procedures of using relaxation as an anxiety inhibiting response and the use of imagined situations of exposure to feared objects or situations are the basic steps of systematic desensitization as it is now known.

The efficacy of systematic desensitization and progressive muscle relaxation in the treatment of social phobia has not been evaluated at great length. The studies which have examined the effect of relaxation interventions found that relaxation was effective if it was practiced in conjunction with exposure techniques (Al-Kubaisy, T., Marks,I.M., Logsdall, S., Marks, M., Lovell, P., Sungur, M., & Araya, R, 1992).

### **Current Practice**

Over the years variations of the original procedure have evolved. In vivo desensitization has been used where the person learns to relax in the presence of the anxiety provoking object or situation (Bourne,1990). As well it has been found that graduated in vivo exposure is more effective than exposure using imagery (Ost, 1989; Emmelkamp,1982).

### **Alternative techniques**

Flooding is a procedure used to treat avoidance responses. The person is exposed, either in vivo or using imagery to the anxiety-provoking stimuli in order to intensify the stress. Prolonged exposure at full strength to the anxiety-provoking object or situation eventually weakens the capacity of that stimulus to elicit anxiety (Masters,

Burish, Hollen & Rimm, 1987).

The first use of flooding with human clients was reported by Malleon (1959). A hierarchy similar to that used in systematic desensitization was employed. Clients were instructed to feel more and more frightened as Malleon went through the hierarchy. The study reported that there initially was an increase in distress followed by the clients regaining their composure and eventually being cured (Malleon, 1959). It has been found that a prolonged exposure to a stressful stimuli is more desirable because the person learns that if they stay in a fearful situation long enough the fear will subside. When this occurs, the situation which once elicited fear may instead be associated with calmer feelings. During prolonged exposure the individual is also not engaging in avoidance behaviour which helped to maintain the fear of the situation (Butler, 1985).

In vivo exposure: Real-life desensitization or in vivo exposure to a feared event or object has been found to be the most effective treatment for phobias (Bourne, 1990). Either ungraded exposure, which is immediate exposure to the feared object or situation, or graduated exposure, which is a gradual exposure to the feared object or event can be used (Beidel & Turner, 1991). Although exposure has produced positive effects in the treatment of social phobia, some concerns have been raised. First many situations which social phobics fear are variable and not predictable. This makes it hard to specify in advance the length of time the person should remain in the situation or how many times the person can repeat the exposure (Butler, 1985). For example,

if a person has a fear of going to the barber for a haircut it is quite easy to have the person approach the barber shop many times, but the person would not be able to have a haircut several times in one session. Butler (1985) suggested that the feared social situation could be broken down into smaller units that the person could practice. For example, the person who was afraid to speak to others in social situations could be given a task list such as using non-verbal signs indicating they wanted to speak, not mumbling when speaking to others, making appropriate eye contact, and starting a conversation with someone. Practicing these elements would provide the person with the opportunity to be actively engaged in the situation and to provoke symptoms of anxiety so they can learn how to cope with these symptoms. As well the exposure to the social situation could be conducted in the treatment setting, such as a clinic, before getting the person to practice in the real world thus affording the therapist with more control over the length and content of the exposure (Butler (1985).

### **Cognitive-behavioural interventions**

Social anxiety is a complex problem. It has been suggested that physiological arousal, negative cognitions, and behavioural factors all play an important role in the development and maintenance of social anxiety. Cognitive features such as the fear of negative evaluation may be particularly important in this aspect (Beidel et al, 1985). Butler (1985) states that interventions which include a cognitive element may be more effective in treating social phobia than interventions which don't include a cognitive

component. Studies which have examined the effectiveness of a combined cognitive-behavioural intervention have not made it clear whether or not the cognitive techniques employed were a factor in positive results or if the behavioural treatment alone contributed to the outcome (Heimburg & Juster, 1995). Biron, Augusto, & Wilson, (1981) examined the effectiveness of exposure and cognitive restructuring with people who were afraid of writing in public. Cognitive restructuring included training the subjects to identify maladaptive thoughts while imagining situations of writing in public, while the exposure component included a hierarchy of feared writing situations. Results showed that exposure led to a significant decrease in avoidance behaviour which was not facilitated by cognitive restructuring.

Mattick & Peters (1988) compared therapist-assisted guided exposure with and without cognitive restructuring. Results showed that exposure alone and the combined treatment were more effective than cognitive restructuring alone in increasing the number of tasks completed in a behavioural test.

The issue of whether or not cognitive techniques are beneficial in conjunction with behavioural treatments is far from being resolved. It has been suggested that cognitive techniques may be important but not for all social phobics. Some people may be more receptive to cognitive interventions than others, that is some people may be better able to control what they are thinking during phobic situations than others can and still others may be able to change their cognitions using techniques which are not cognitive in nature (Heimburg & Juster, 1995).



**Hayes Anxiety Relief Technique (HART)**

The development of new techniques often occurs over many years of work in a clinical setting. Recently a new and untested procedure, Hayes Anxiety Relief Technique (HART) has been developed to help the person manage their anxiety and to recognize those thoughts and behaviours which may be contributing to and maintaining anxiety. HART consists of the following techniques:

1)Monitoring Self Talk: Self-talk refers to the accessible verbal cognitions that guide behaviours. Usually self-talk is so automatic that the individual does not notice what they are saying to themselves unless the person is specifically paying attention to it or monitoring it (Bourne,1990). Anxiety can be created or maintained by the individual thinking statements such as "what if I lose control while driving?" or " what will people think if they see me lose control?" (Bourne,1990). This type of negative self-talk only serves to create a state of hypervigilance where the person anticipates something terrible happening before it actually occurs (Bourne, 1990).

A common term for this is "worry". Trying to define the concept of worry is not easy to do. Worry seems to involve uncontrollable, negative, affect-laden, thoughts and images that can often occur at the same time or one after another. In this instance one perhaps serves as a cue for the other (Borkovec, Robinson, Pruzinsky, & Dupree, 1983). For example thinking about something disastrous happening, such as a heart attack, may cue images of that event, thereby heightening the anxiety (Bourne, 1990).

Worry may be seen as a cognitive process which has been adapted to anticipate

possible threatening or dangerous situations (Matthews,1990). Exploratory studies on the content of worry have found that excessive worry seems to be concerned with threats to the self, both personal and emotional rather than to just danger in a general or abstract sense (Matthews, 1990).

Several theories have been postulated to account for the phenomenon of worry. Barlow (1988) proposed that worry involves an intricate sequence of events. Certain circumstances, such as performing on a test for example, initiate the making of anxious assumptions which are stored in memory and in turn produce a state of negative affect. This negative affect may include such perceptions as having no control over the situation or an inability to achieve a desired outcome. The person's attention then changes from an external environment to one which focuses on internal, negative affective, self-evaluative statements. This concentration on internal events leads to an increased state of arousal and an even narrower internal focus which prevents any attention being diverted to outside events which are not related worry. This sequence of events leads to hypervigilance about such occurrences, disruption in concentration and performance, and eventually avoidance of situations which are the source of the apprehension when possible (Barlow,1988). In circumstances where a performance of a task is not the issue but the perception of a loss of control is, the focus may be on important life events such as health issues, financial, or family concerns (Barlow,1988).

Eysenck (1992) proposed that the process of worry has several functions. Worry acts as an alarm which brings into our conscious awareness information about

threatening situations. It serves as a cuing function which brings threat-related thoughts and images into our awareness. Worry also prepares a person to anticipate future similar occurrences which may reduce the negative affect associated with the situation through a process of habituation (Eysenck, 1992). This process would seem to be desirable in that it would remove the element of surprise and leave us better able to cope with a threat should it occur (Matthews, 1990). In some aspects, this process resembles problem solving activities, the difference being that the threatening scenario is constantly being rehearsed and an adequate conclusion is not found (Matthews, 1990).

Many individuals attempt to instruct themselves by telling themselves what they should not do. For example, they might say privately to themselves " Don't worry!" however, instructions which focus on what not to do are not particularly effective. Often such negative self-talk increases the experienced level of anxiety and generates negative affect in anticipation of a feared event (Girodo & Stein, 1978). Instead of the individual telling themselves in a negative manner what they should not do, a more effective method is for the individual to give themselves positive, supportive instructions as to what they should do. Countering negative self-talk with positive statements are a way of refuting those negative statements (Bourne, 1990).

2) Anxiety Management: High levels of anxiety may promote and exacerbate beliefs that one has lost control over emotions. As well as thinking that they are out of control, a person may also believe that they are vulnerable and predict that they will

make a fool of themselves in a certain situation (Bourne, 1991). Feelings of fear strongly involve a physiological arousal of multiple systems and includes increased heart rate, perspiration, respiration, and dryness of mouth (Barlow & Craske, 1989). Often these symptoms are accompanied by racing thoughts and a desire to avoid the event or to escape from it (Beidel & Turner, 1991).

For each person there is often a set of behaviors which routinely accompany feelings of high anxiety. Such behaviors may act as discriminative stimuli or cues signaling anxiety (Hallam, 1985). These cues could include an increased rate of speech, an increased loudness of tone, and an elevated pitch of voice. There also may be an increase in motoric behaviors such as hand wringing, swinging a leg back and forth, rocking, or foot tapping to name just a few. These behaviours may result in an increase in generalized anxiety. The monitoring of thoughts, increases in rate of speech; increases in volume and tone of speech; increased motoric involvement; and behavioural cues, each may contribute to specific feelings, thoughts, and behaviours that maintain anxiety.

As a coping strategy for an increase in the rate, tone and pitch of their voice, a person may control their voice by speaking slowly and softly, factors which are also interestingly associated with being calm and relaxed.

Increases in motoric behaviours may be controlled by the person monitoring these movements and becoming familiar with these behaviours. For example, if a person knows that during an anxious situation they will wring their hands together and swing a leg back and forth, a coping strategy can be developed and rehearsed to help reduce

and/or eventually eliminate these behaviours when they occur.

### 3) Breathing control

Research has shown that 50-60% of people who experience panic exhibit symptoms of overbreathing or hyperventilation (Barlow & Craske, 1989).

Overbreathing may be the initial symptom that the person reacts to, or it may be part of the person's reaction to the fear (Barlow & Craske, 1989).

Learning how to slow down the rate of breathing may 1) help the person to relax and reduce tension, 2) eliminate some of the cues which the person has become sensitive to which trigger anxiety and panic, and 3) reduce some of the physical symptoms the person experiences during panics (Barlow & Craske, 1989).

Overbreathing often produces symptoms which include feeling hot, flushed, sweaty, chest pressure and tightness, and sometimes severe chest pain. These changes actually prepare the body for a fight or flight situation which is why a person feels the need to escape during a period of panic (Barlow & Craske, 1989).

The process of controlled breathing involves the following: on inhalation the person would start counting at one, when breathing out the person would think about relaxing, on the next inhalation the person would count two, and on exhalation the person would again think about relaxing. This would continue on until a count of ten was reached and then the process would be continued counting back down to one. Breathing should be done through the nose as this helps the person to breathe more slowly. The person should inhale for a count of three seconds and exhale for a count

of three seconds (Barlow & Craske, 1989).

### **Self-Control Triad**

Recently, a covert conditioning procedure called the Self-Control Triad has been developed to reduce anxiety and the occurrence of undesirable behaviours (Cautela, 1984, 1994). This procedure consists of three techniques:

- 1) Thought stopping - the therapist first instructs the subject to raise a finger when a maladaptive thought occurs. When the subject raises a finger, the therapist yells "stop" out loud which startles the subject and often stops the thought. Then the subject repeatedly practices imagining that they are yelling "Stop" in their head when a maladaptive thought occurs. At first the subject does this with their eyes closed and then with their eyes open. Once this step is mastered the subject goes on to the next technique (Cautela, 1984).
  
- 2) Relaxation breathing - this involves teaching the subject how to inhale and exhale slowly and with their eyes closed, and to imagine the muscles relaxing from head to toe. Once the subject has mastered this, the relaxation breathing is performed with the person's eyes open (Cautela, 1984).
  
- 3) Reinforcement procedure - in this final intervention, the subject tries to imagine an experience that is pleasant such as lying on a beach or playing music. Again, this is done with the eyes closed. The imagining of a pleasant experience serves to distract

the subject from thinking maladaptive thoughts. As well, the feelings which are evoked are opposite to those of anxiety. It also acts as a positive reinforcement for doing steps one and two.

Once the subject has successfully imagined several pleasant scenes, the three steps are combined. The subject is instructed to not let the three steps overlap. The subject then practices SCT by imagining the occurrence of an undesirable behaviour and doing the SCT as soon as the behaviour commences. Sometimes this procedure has to be performed several times in order to reduce an undesired behaviour sufficiently enough to enable adequate functioning.

The purpose of this study is to compare the efficacy of the Self-Control Triad (SCT) with Hayes Anxiety Relief Technique (HART) in the treatment of social phobia, specifically public speaking anxiety. SCT is a covert conditioning procedure which involves the use of thought stopping, imagery, and relaxation breathing. HART is a cognitive-behavioural technique which involves the use of in-vivo exposure to the feared situation or object, identification of behaviours and accessible verbal cognitions which may help to trigger and maintain anxiety, and controlled breathing. There are no published studies validating HART, however this technique has been used in clinical practice with clients who have agoraphobia and specific phobias. The results of these sessions have been very encouraging (Hayes personal communication). SCT has been found to be effective in treating agoraphobia and panic disorder (Cautela, 1994), impulse control problems such as drug addiction, alcoholism, and

smoking (Cautela & Kearney, 1986), obsessive-compulsive disorder (Kearney,1993), and anticipatory anxiety in surgical situations (Kearney,1993).

Based upon the previous literature review, it is hypothesized that the treatment method used may influence the level of anxiety in subjects with public speaking anxiety. Using the HART method may result in lower levels of subjective, cognitive, and behavioural anxiety during a public speaking task than when using SCT.

The study involves one independent variable, treatment, with three levels, one group will be treated with the HART method, one group will be treated using the SCT method, and a control group which will receive bibliotherapy, using material from the Toastmasters association. The study also involves three dependent variables. Features of subjective, cognitive, and behavioural anxiety will be assessed. The Graded Speaking Test (Newman, Hofman, Trabert, Roth, & Taylor, 1994) will assess behavioural factors, the Fear of Negative Evaluation (Watson & Friend,1969) questionnaire will assess cognitive factors, and the Audience Anxiousness Scale (Leary,1983) as well as the Beck Anxiety Inventory (Beck, Epstein, Brown & Steer, 1988) will be used to assess subjective anxiety levels.

## **Method**

### **Participants**

Sixty undergraduate students from Saint Mary's University voluntarily signed up for the study. All participants were interviewed with the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown, Dinardo,& Barlow,1994). Participants were



selected for the study if they met the criteria for social phobia and rated their level of speech anxiety as seven out of a ten point scale. Exclusion criteria included major depressive disorder, substance abuse or dependence, psychosis, as well as any current use of anti-depressant or anxiolytic medications. Of the 60 participants who initially volunteered, 50 met the criteria for the study. Two participants dropped out immediately after the interview. The remaining 48 participants were randomly assigned to either a treatment group or the control group. Two participants from HART dropped out before treatment began, two participants from the SCT treatment group and two participants from the control group dropped out before the treatment sessions were completed. This left 42 people (14 SCT subjects, 14 HART subjects and 14 control subjects) who completed the study. There were 28 females and fourteen males. Their ages ranged from 18-32 and the mean age was 21.1 years.

### Procedure

Informed consent (see Appendix A) was obtained from each participant. Confidentiality, voluntary participation, and freedom to withdraw from the study at any time was explained. The nature and purpose of the study was also explained. Those who consented to participate were then administered The Anxiety Disorders Interview Schedule for DSM-IV (Brown, DiNardo, & Barlow, 1994) and were also asked to rate their overall level of public speaking anxiety using a visual analogue scale marked from one to ten. Participants who met the DSM-IV criteria for Social Phobia and who rated their public speaking anxiety as seven or above were included

in the study. Those participants were then randomly assigned to one of three groups: 1) a bibliotherapy control group which were given material from the Toastmasters association on public speaking to read; 2) a treatment group which used the HART procedure (see Appendix B); 3) a treatment group which used the SCT procedure (see Appendix C). Each of the treatment groups and the control group were randomly assigned to two groups of five and one group of four. A pretreatment session for each participant consisted of the administration of the behavioral, cognitive and self-report measures to acquire a baseline assessment. The treatment sessions were for one hour a week for three weeks. Two masters level students conducted the treatment sessions. One student was trained to administer the SCT protocols, and the other student was trained to conduct the HART protocols.

A posttreatment assessment included all the pretest measures with the exception of the ADIS-IV.

### Measures

The Anxiety Disorders Interview Schedule for DSM-IV (ADIS- IV; Brown, DiNardo, & Barlow, 1994). All potential participants were interviewed using this structured interview designed to assess current episodes of anxiety disorders including Social Phobia according to DSM-IV criteria (American Psychiatric Association, 1994). In addition to yielding diagnostic information, a severity rating (0-8) is made for each diagnosis to indicate the level of distress and/or functional impairment. The anchor

points include: 0 (absent), none; 2 (mild), slightly disturbing, not really disabling, 4 (moderate), definitely disturbing, disabling; 8 (severe), very severely disturbing, disabling. A severity rating of four or greater is indicative of clinically significant impairment. The reliability for diagnosing social phobia using the ADIS-IV is very high ( $Kappa = .91$ ).

### **Behavioral Assessment**

Graded Speaking Test (GST; Newman, Hofmann, Trabert, Roth, Taylor, 1994). The GST is a behavioural assessment procedure designed to measure behavioural parameters of speech anxiety. This test consists of four steps: 1) Baseline - the participant sits in a chair while the experimenter is outside the room; 2) the subject is given a list of five topics (corporal punishment in schools, abortion, nuclear power, drinking and driving, pollution) from which to choose three to prepare a ten minute talk while the experimenter is outside the room. Participants are told that they can make notes but cannot read from these notes during their speech. They are also told they should plan to speak for the entire ten minutes, but are free to spend as much or little time on any of the three chosen topics as they wish. Participants are instructed that they may stop at any time if they are experiencing a lot of distress; 3) the participant sits in front of an audience; 4) the participant gives a talk in front of the audience. The participants are given 3 minutes for the first three steps. The speech ends when the participant holds a card up with the word "Stop" written on it. The

participants were rated by one male and one female student (honors level) on the questions "How good was the speech?" using a six point scale (0=extremely poor, to 5=excellent) and "How anxious was the speaker?" using a sixpoint scale (0=extremely anxious, to 5= not anxious at all, see Appendix D). The raters were also the "audience". The students rating the speeches were given a short training session on the use of the coding scheme and achieved interrater reliability of  $r=.88$  for "good speech" ratings and  $r=.93$  for ratings of behavioural anxiety. As well, the raters were unknown to the participant and did not know which group the participant was assigned to. After the speech concluded, the participants evaluated their own performance on the same questions as the raters (see Appendix E). The topics for the postmeasurement speech were recycling, career plans, seat belt laws, non-smoking policies in public places, and the separation of Quebec from Canada.

### Subjective Anxiety Measures

Audience Anxiousness Scale (AAS; Leary, 1983). The AAS is a 12 item scale designed to assess social anxiety. Items include statements such as " I usually get nervous when I speak in front of a group " and "I get butterflies in my stomach when I must speak or perform before others". Each item is rated on a five point scale from "uncharacteristic or not true" to "characteristic or true". Scores are obtained by summing the item ratings, a high score indicating high social anxiety. Scores may range from 12 to 60. The reliabilty of the AAS is very high. Using a sample of 363

college students, internal consistency using coefficient alpha is .88, test-retest reliability over a four week period was found to be .84 (Leary,1988).

Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer,1988; ). The BAI is a 21 item inventory assessing self-reported anxiety. Symptoms are rated on a four point scale (0= not at all) to (3=severely). Items include " dizzy or light-headed" and " fear of losing control". The score for the BAI is determined by summing the rating of each symptom. Subject scores can range from 0 to 63. Scores from 0 to 9 reflect a normal level of anxiety, 10-18 indicate a moderate level; 19-29 reflect moderate to severe anxiety; and 30-63 indicate severe anxiety. The reliability of the BAI is very high. The internal consistency using Cronbach's Alpha is .92.

### Cognitive Measure

Fear of Negative Evaluation (FNE; Watson & Friend,1969). The FNE is a 30 item instrument designed to assess the fear of negative evaluation from others. The FNE items are answered "true or "false". Scores are the sum of all item values and range from 0 to 30. Scores on the FNE have shown improvement as a result of treatment of public speaking anxious individuals (Goldfried & Goldfried, 1977) and people with social phobia (Butler, 1985; Matick, Peters & Clark, 1989). The reliability for the FNE is very high. For a sample of 205 college students, internal consistency using Kuder-Richardson formula 20 was .94. The test-retest correlation was .78 over a period of one month (Watson & Friend, 1969).

**Treatment**

Therapy consisted of one hour a week for three weeks. Each of the therapy groups and the control group consisted of two groups of four and one group of five. In the first session of the therapy groups, the procedure was explained (see appendices H and I). For the participants in the HART therapy groups, the last half hour of the first session and sessions two and three devoted time to exposure and feedback from other members in the group. For each exposure the participants were asked to speak on a topic of their choice. After the participant had finished their speech, group members were asked to give the speaker behavioural feedback on their performance. Such feedback included references to the person's rate of speech, pitch of the voice, loudness or softness of the tone of voice, eye contact, body movements, body position, gestures, clarity of speech, and how nervous or comfortable the person appeared. As well, the speaker was asked what they were thinking during their speech. Each subject had the opportunity to speak three times during the session. After each session, as a homework assignment, the participants were asked to practice speaking in front of people at every opportunity they had. As well, they were asked to practice maintaining eye contact during conversation with others.

The first part of session one for the SCT group was spent on explaining the procedure to the participants. The remaining half hour of the first session and the all of the next two sessions were spent doing the SCT therapy. In between sessions, the participants were asked to practice the SCT procedure whenever they felt they were getting anxious in a situation and to keep a record of how many times and in what

situations they used the procedure.

## **Results**

### **Correlations**

Table 1 presents the correlations between the pretests (AAS, FNE, BAI, SAB, SRB) and the posttests (AASA, FNEA, BAIA, SAA, SRA). The Audience Anxiousness Scale had a significant positive correlation with the Audience Anxiousness Scale After ( $r = .33$ ,  $p < .05$ ), and a significant negative correlation was found between the Audience Anxiousness Scale and Speech Anxiety Before ( $r = -.37$ ,  $p < .05$ )

Table 1. Correlation Matrix for Pre and Posttest Variables

	1	2	3	4	5	6	7	8	9
1)AAS	1.00								
2)FNE	.26	1.00							
3)BAI	.07	.28	1.00						
4)SAB	-.37*	.05	.07	1.00					
5)SRB	-.26	-.03	.03	.67*	1.00				
6)AASA	.33*	.32*	-.08	-.08	-.18	1.00			
7)FNEA	.23	.71*	.10	.07	-.14	.57*	1.00		

(table 1 cont'd)

8)BAIA	.23	.21	.10	-.14	-.10	.37*	.40**		
9)SAA	-.04	-.20	.07	.04	.17	-.47**	-.45**	-.00	
10)SRA	-.09	-.08	-.10	-.00	.27	-.35*	-.33*	.19	.56*

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$p < .05^*$ ,  $p < .01^{**}$

Note: AAS=Audience Anxiousness Scale, FNE = Fear of Negative Evaluation; BAI = Beck Anxiety Inventory; SAB = Speech Anxiety Before; SAA = Speech Anxiety After; SRB = Speech Rating Before; SRA = Speech Rating After; AASA = Audience Anxiousness Scale after; FNEA = Fear of Negative Evaluation after, BAIA = Beck Anxiety Inventory after

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Audience Anxiousness Scale After correlated positively with the Fear of Negative Evaluation ( $r = .32$ ,  $p = < .05$ ), the Beck Anxiety Inventory After ( $r = .37$ ,  $p = < .01$ ), and the Fear of Negative Evaluation After ( $r = .57$ ,  $p = < .05$ ). Audience Anxiousness Scale correlated negatively with Speech Anxiety After ( $r = -.47$ ,  $p = < .01$ ) and Speech Rating After ( $r = .35$ ,  $p = < .05$ ).

Fear of Negative Evaluation Scale After correlated positively with both Fear of Negative Evaluation ( $r = .71$ ,  $p = < .05$ ) and the Beck Anxiety Inventory After ( $r = .40$ ,  $p = < .01$ ). Fear of Negative Evaluation Scale After correlated negatively with Speech Anxiety After ( $r = -.45$ ,  $p = < .05$ ) and Speech Rating After ( $r = -.33$ ,  $p = < .05$ ).

Speech Anxiety After correlated positively with Speech Rating After



( $r = .56, p = < .05$ ). A significant positive correlation was also found between Speech Anxiety Before and Speech Rating Before ( $r = .67, p = < .05$ ).

### MANCOVA

Since there was a fair degree of correlation between the measures, a multivariate analysis of covariance (MANCOVA) was used to evaluate the differences between the three conditions. The posttest variables FNEA, AASA, BAIA, SAA, and SRA were entered in the MANCOVA as the dependent variables with the pretest variables AAS, FNE, BAI, SRB, SAB used as the covariates. The independent variable was the three different treatment groups (HART, SCT, and Control).

Results for the evaluation of the assumptions of normality, linearity, and homogeneity of the regression hyperplanes were satisfactory.

The multivariate tests for relationships between the set of dependent variables and the set of covariates was significant using the Wilks criterion ( $F = 2.03, p < .05$ ).

The main result for the multivariate analysis of covariance (MANCOVA) shows that the adjusted population mean vectors are significantly different at the .05 level using the Wilks criterion ( $F = 2.09, p < .05$ ). Table 2 presents the univariate analysis which indicates that three variables, SRA, SAA, and the AASA, contributed significantly to the overall multivariate significance at the .05 level. The HART group had a higher mean score on both the SRA (3.71, see Figure 5) and the SAA (3.71, see Figure 4) than either the SCT (SRA = 2.71, SAA = 2.92) or control (SRA = 2.85, SAA = 2.64) groups. As well HART had a lower mean score on the

AASA (42.21, see Table 3, Figure 1)

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Table 2. Results of Univariate Analysis (while controlling  
for pretest variables)

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IV	DV	Univ. F	df	Prob.
T.Group	SRA	7.22	2/34	.002
	SAA	5.38	2/34	.009
	AASA	4.93	2/34	.013
	FNEA	1.32	2/34	.278
	BAIA	.11	2/34	.894

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Note: T.group=treatment group, AASA=Audience Anxiousness Scale After,  
SAA=Speech Anxiety After, SRA=Speech Rating After, FNEA=Fear of Negative  
Evaluation After, BAIA=Beck Anxiety Inventory After

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A stepdown analysis was also performed on the prioritized dependant variables which were entered into the analysis in order of significance. Table 4 shows that the greatest contribution to the stepdown analysis was made by the SRA adjusted by the SAA, AASA, FNEA and the BAIA [Stepdown  $F(2,34)=7.22, p < .05$ ]. Although the univariate analysis showed that the SAA [ $F(2,34)=5.38, p < .05$ ] and the AASA [ $F(2,34)=4.93, p < .05$ ] were significant, the stepdown analysis showed that they did

not account for a significant proportion of variance that was accounted for by the SRA.

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Table 4. Stepdown F Analysis of the Dependent Variables  
(while controlling for the pretest variables)

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IV	DV	Stepdown F	df	Prob.
<hr/>				
T.Group	SRA	7.22	2/34	.002
	SAA	1.88	2/33	.168
	AASA	2.07	2/32	.142
	FNEA	.122	2/31	.885
	BAIA	.118	2/30	.889

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Note: T.Group=treatment group, AASA=Audience Anxiousness Scale After, SAA= Speech Anxiety After, SRA= Speech Rating After, FNEA = Fear of Negative Evaluation After, BAIA=Beck Anxiety Inventory After

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For the SRA, the HART treatment group scored higher (adjusted mean = 3.80; stepdown  $F(2,34)=7.22, p < .05$ ) than either the SCT group (adjusted mean = 2.69) or the control group (adjusted mean = 2.78).

The HART treatment group had lower scores on the AASA (adjusted mean = 41.7; stepdown  $F(2,32)=2.07, p>.05$ ) than either the SCT group (adjusted mean = 45.83) or the control group (adjusted mean = 47.97).

The HART treatment group scored higher on the SAA (adjusted mean = 3.73; stepdown  $F(2,33)=1.88, p>.05$ ) than either the SCT group (adjusted mean = 2.98) or the control group (adjusted mean = 2.57).

### Post Hoc Analysis

Post hoc comparisons were conducted to determine the differences between the treatment groups on the dependent variables. With the use of the Wilks criterion, the HART treatment group differed significantly from the control group on the multivariate composite [ $F=3.75, p<.05$ ] while controlling for the pretest variables.

The univariate analysis showed that the HART treatment group was significant with the AASA [ $F(1,34)=9.63, p<.05$ ], SAA [ $F(1,34)=10.55, p<.05$ ] and the SRA [ $F(1,34)=10.07, p<.05$ ]. Table 5 presents the results of this analysis.

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Table 5. Post Hoc Univariate Analysis for HART vs Control on the Dependent Variables (while controlling for pretest variables)

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IV	DV	Univ. F	df	Prob.
HART	SRA	10.07	1/34	.003

(table 5 cont'd)

SAA	10.55	1/34	.003
AASA	9.63	1/34	.004
FNEA	2.52	1/34	.121
BAIA	.05	1/34	.813

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Note: AASA=Audience Anxiousness Scale, SAA=Speech Anxiety After,  
SRA=Speech Rating After, FNEA=Fear of Negative Evaluation After, BAIA=Beck  
Anxiety Inventory After

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Table 6 presents the results of the stepdown analysis for HART vs Control performed on the prioritized dependent variables. The HART treatment group again showed significance with the SRA [ $F(1,34)=10.07, p < .05$ ] and the AASA [ $F(1,32)=4.10, p < .05$ ]. Although the univariate analysis showed the SAA [ $F(1,34)=10.55, p < .05$ ] to be significant, the stepdown analysis did not show this.

The HART treatment group scored higher on the SRA [adjusted mean=3.80; stepdown  $F(1,34)=10.07, p < .05$ ] than either the SCT (adjusted mean=2.69) or control (adjusted mean=2.7) groups. On the AASA, the HART group scored lower (adjusted mean=41.8) than either the SCT (adjusted mean=45.83) or control (adjusted mean=47.0) groups.

Table 6. Post Hoc Stepdown Analysis of HART vs Control group on Dependent Variables (while controlling for pretest variables)

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IV	DV	Stepdown F	df	Prob.
<hr/>				
HART	SRA	10.07	1/34	.003
	SAA	3.15	1/33	.085
	AASA	4.10	1/32	.051
	FNEA	.23	1/31	.629
	BAIA	.22	1/30	.640

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Note: AASA=Audience Anxiousness Scale, SAA=Speech Anxiety After, SRA=Speech Rating After, FNEA=Fear of Negative Evaluation After, BAIA=Beck Anxiety Inventory After

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The post hoc comparison between the HART group and the SCT group showed with the use of the Wilks criterion, that the HART treatment group differed significantly from the SCT group on the multivariate composite [ $F=2.79, p < .05$ ] while controlling for the pretest variables.

The univariate analysis showed that the HART treatment group was significant with the SRA [ $F(1,34)=11.95, p < .05$ ], SAA [ $F(1,34)=4.46, p < .05$ ], and the AASA

[ $F(1,34)=4.24, p < .05$ ]. Table 7 presents the results of this analysis.

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Table 7. Post Hoc Univariate Analysis for HART vs SCT on the Dependent Variables  
(while controlling for pretest variables)

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IV	DV	Univ.F	df	Prob.
HART	SRA	11.95	1/34	.001
	SAA	4.46	1/34	.042
	AASA	4.24	1/34	.047
	FNEA	1.33	1/34	.257
	BAIA	.22	1/34	.639

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Note: AASA=Audience Anxiousness Scale, SAA=Speech Anxiety After,  
SRA=Speech Rating After, FNEA=Fear of Negative Evaluation After, BAIA=Beck  
Anxiety Inventory After

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Table 8 presents the results of the stepdown analysis for HART vs SCT performed on the prioritized dependent variables. The HART treatment group again showed significance with the SRA [ $F(1,34)=11.95, p < .05$ ]. Although the univariate analysis showed the SAA and the AASA to be significant, the stepdown analysis did not show this.

Table 8. Post Hoc Stepdown Analysis of HART vs SCT on the Dependent Variables  
(while controlling for pretest variables)

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IV	DV	Stepdown F	df	Prob
<hr/>				
HART	SRA	11.95	1/34	.001
	SAA	.29	1/33	.589
	AASA	2.19	1/32	.151
	FNEA	.15	1/31	.698
	BAIA	.05	1/30	.820

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Note: AASA=Audience Anxiousness Scale, SAA=Speech Anxiety After,  
SRA=Speech Rating After, FNEA=Fear of Negative Evaluation After, BAIA=Beck  
Anxiety Inventory After

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The HART treatment group scored higher on the SRA (adjusted means=3.80) and the SAA (adjusted means=3.73) than either the SCT (SRA adjusted means=2.78, SAA adjusted means=2.98) or control (SRA adjusted means=2.69, SAA adjusted means=2.57) groups. On the AASA, the HART treatment group scored lower (adjusted means=41.68) than either the SCT (adjusted means=45.83) or control (adjusted means=47.97) groups.



## **DISCUSSION**

The results of this study partially support the hypothesis that the type of treatment method used may influence the level of anxiety in individuals with public speaking anxiety. In examining the treatment conditions and the control group, only the HART group showed statistically significant improvement on the post treatment measure of the AAS (subjective measure). Using criteria developed by Jacobson, Follette, and Revenstorf (1984) to determine if this change was reliable, it was found that 71% of the HART group improved to a clinically significant degree in comparison to 28.6% for SCT and seven percent for the control group. The AAS assesses anxiety in situations which are not contingent upon the responses of others, such as giving a speech. The AAS includes items which refer to cognitive, affective, and physiological content. The improvement on the AAS may indicate that using HART helped to lower the subject's anxiety in these areas. Participants using HART were given feedback on their behaviours during their speech on such things as how well they maintained eye contact, motoric behaviors such as hand wringing and swaying back and forth, and other cues which may signal anxiety such as speaking quickly and loudly. During each subsequent speech, participants would then try to improve upon maintaining eye contact and any other areas targeted such as slowing down the rate of speech. Many individuals did not realize before feedback was given that they were speaking rapidly or not looking at people and with practice were able

to notice these things on their own and slow down when speaking rapidly or look at the audience more during their speech. As a result of this the physiological aspects of anxiety such as an increase in heart rate, sweaty palms and dryness of mouth (Barlow & Craske, 1989) may also have diminished promoting a more relaxed state in the individual. In relation to this, the results of the BAI which also assesses subjective anxiety, although not statistically significant, were lower after therapy was completed. The group which showed the most improvement on the BAI was the control group which is an unexpected result. The reason for this can be explained by one score in the pretest measure which was an outlier that in turn skewed the posttest result.

In terms of behavioral anxiety when compared to the SCT and control groups, the HART group was rated by objective raters as showing the most significant improvement on the SAA and the SRA. Again using Jacobson's et al (1984) criteria, on the SAA, 92% of the HART group improved to a clinically significant degree compared to the SCT (28.6%) and control (0%) groups. For the SRA, 85.7% of the HART showed significant clinical improvement in contrast to 14.2% for the SCT group and 14.2% for the control group. Previous studies involving the comparison of different treatment techniques for social phobia have reported that in vivo exposure is the most effective treatment (Stern & Marks, 1973; Chaplin & Levine, 1980; Emmelkamp, 1982; Matthews, Gelden & Johnston, 1982; Bourne, 1990; Donohue, Van Hasselt, & Hersen, 1994). Improvement on the behavioral measures of the SAA and the SRA may indicate that the in vivo exposure component of HART helped to lower levels of behavioral anxiety during the post therapy speech task. The speech task was

actually a phobic situation for the participants because it involved performing under the scrutiny of others and facing the fear associated with that situation. During the speech task, the participants did not avoid their fear which allowed them to learn that the anxiety would subside, allowing a new association to develop between that situation and calmer feelings. As was the case with the AAS, another aspect which may have contributed to lower levels of behavioral anxiety was the feedback participants were given on their performance from the group. Suggestions were made on areas the person could improve upon during the next speech such as maintaining eye contact or slowing down the rate of speech. Group members also provided positive feedback regarding what the person did well during their speech. Group therapy which focuses on one particular problem provides the opportunity for each member not only to learn as a result of their own performances and feedback, but to learn from watching other members in the group as well. Using behavioural techniques in general it has been found that clinically significant improvement occurs with 65-75% of social phobics (Ost, 1989). The results for the HART group are not only consistent with this statistic but exceed it on the SAA and SRA. As well it should be noted that this result was obtained with participants having only three sessions which is a considerably shorter time period than most techniques.

In terms of cognitive change, although the score on the post measurement of the FNE was lower for the HART groups than either the SCT or control groups, the change was not significant when analyzed statistically. HART does not directly address negative cognitions, however the improvement on the FNE is consistent with

other studies which have found that behavioural treatments alone can affect a cognitive change (Newman, Hofman, Trabert, Roth, Taylor, 1994; Gelernter, Uhde, Cimboic, Arnkoff, Vittone, Tancer, Bartko, 1991; Mattick & Peters, 1989; Williams & Rappoport, 1983). Furthermore, the participants in HART were forced to focus on their behavioural responses during their speech such as the rate of speech and loudness of their voice. This distracted them from focusing on what they were thinking, therefore, they were not preoccupied with negative self-statements and could process social cues, for example, how other members of the group were reacting to them during their speech. As well, the element of positive feedback given by group members after the individuals speech may have served as a positive reinforcement, labeling the person's efforts as being successful. The person's expectations of being negatively evaluated would then be disconfirmed and expectations of self-efficacy increased. Another factor to consider is that the participants were not avoiding the feared situation, they were repeatedly exposed to it which lead to a decrease in anxiety which in turn changed the individuals interpretation of the situation.

When members of the HART therapy groups were asked the question of how good they thought their speech was, the pretherapy response resulted in sixty percent of the members stating that their speech was very poor. This rating was lower than that given by the objective raters using the same scale. This is consistent with other studies that have found that socially anxious individuals usually underestimate the quality of their performance (Beidel et al, 1985; Heimberg, Hope, Dodge, & Becker, 1990). In contrast to this, when asked the same question after the therapy sessions

were completed, only forty percent of group members rated their speech poorer than the objective raters did. Therefore, although the FNE which assesses one's expectations of being evaluated negatively was not significant statistically, there may have been some change in the participants' assumptions and beliefs.

The members of the HART groups were asked to take part in situations during the week between therapy sessions where they would be called upon to participate, such as in class, doing presentations, having conversations with others, situations which they may have avoided before, and practice the HART technique. Due to the time of year the study was conducted (near the end of term), there were not many opportunities to do so, however, most members did try to practice HART in social situations as well as in class and found that they experienced less anxiety. Overall the HART groups found this technique to be simple to learn and use and effective in managing their anxiety in social situations.

The results for the SCT groups indicated slight improvement which when analyzed statistically was not significant. SCT is a technique which has been used effectively in previous studies to treat agoraphobia and panic disorder (Cautela, 1994), impulse control problems such as drug addiction, alcoholism, and smoking (Cautela & Kearney, 1986), pain control (Cleveland, 1982), obsessive-compulsive disorder (Kearney, 1993), and anticipatory anxiety in surgical situations (Kearney, 1993). SCT was chosen as the alternative technique in this study because it has been shown to be effective in several studies mentioned previously and because it can be easily taught and used in a variety of situations and by different

populations. Although the element of thought stopping when used as a technique alone has not been found to be effective, the word "stop" which the participants are taught to yell in their imagination is used as a variant of the thought stopping procedure. When used in conjunction with the other two techniques included in SCT, the auditory or visual imagery of "stop" is conceived to be counterconditioning and has been found to be effective.

A factor which may have contributed to the lack of significant improvement on the post test measures for the SCT group was how well the participants did with the imagery step of the therapy. Some (especially females) had no difficulty with this step at all while others (mostly males) had difficulty imagining pleasant scenes. As was the case with the HART groups, another factor that may have contributed to the lack of significant results would be the time factor. There may have not been enough sessions conducted to enable the participants to change their perceptions of others' motives and behaviors towards them. As well, because there was not an element of exposure to the feared situation (public speaking), an opportunity to process disconfirmatory information may not have been present. The time factor may have also effected how well the participants were able to master the SCT procedure, especially if they were having problems with the imagery.

When members of the SCT groups were asked the question "How good do you think your speech was?", the pretherapy response indicated that sixty-six percent of the members rated their speech as being very poor. This was a lower rating than was given by the objective raters. When asked this same question after the therapy

sessions were completed, only fifty-four percent rated their speech lower than the objective raters.

### **ADIS-IV Interviews**

For the purpose of this study, the ADIS-IV was used as a screening tool to assess the level and extent of the participants' social anxiety in certain situations, especially that of public speaking, and to determine whether or not individuals met the DSM-IV criteria for social phobia. A severity rating on a scale of 0 to 8 was made for each person. Individuals were not given a diagnosis of social phobia or of any other disorder but were only told whether or not they met the criteria to be included in the study. As well, the entire ADIS-IV was not used, only the sections assessing panic disorder, agoraphobia, specific phobia, social phobia, generalized anxiety disorder, obsessive-compulsive, depressive episode, major depression, alcohol abuse/dependence, substance abuse, nonorganic psychosis/conversion symptoms and the sections on family history of psychological disorders and medical history were administered. Fifty out of sixty individuals who did the interview met the criteria for social phobia and on average had a severity rating of six out of eight which indicates a level of distress or functional impairment between moderate and severe. A severity rating of four or more is indicative of clinically significant impairment (Brown, Dinardo, & Barlow, 1994). The eight participants who dropped out of the study (two after the interview, two from HART, two from SCT, and two from the control group) all had an ADIS-IV rating of six which was the average rating of the sample. Both the

treatment groups and the control group were equally handicapped in that no group had a more severe ADIS-IV rating. Each group had one participant with a rating of eight and no group had a participant with a rating less than five. Even though a clinical diagnosis was not given to the participants, it must be stressed that the participants in this study all met the DSM-IV criteria for social phobia and had ratings high enough on the ADIS-IV to indicate a clinical problem. Therefore this study addressed a real problem and was not an analogue study.

Previous studies concerning social phobia have identified two subtypes of this disorder, "performance" and "generalized" social phobia (Henklemann & Schneier, 1995, Heimberg et al, 1993). In this study, twenty-nine out of forty-five who completed treatment were "generalized" social phobics (ten from HART, ten from SCT, and nine from the control group) and sixteen (four from HART, Four from SCT, and five from the control group) could be described as having a "performance" subtype of social phobia. The participants with the "performance" subtype feared speaking in public and doing presentations and experienced less disruption in their lives than those with the "generalized" subtype who feared many social situations such as parties, dating, meeting strangers, being assertive, initiating and maintaining conversations, and eating in public.

#### **Differential diagnosis and comorbidity**

Alcohol (19%) and drug abuse (13%) have been found to have high comorbidity rates with social phobia (Heckelman & Schneier, 1995). Five participants



stated that they drank alcohol as a means of coping with the anxiety from day to day. When questioned further about their use of alcohol, all stated that they didn't have a drinking problem and had never been in trouble as a result of drinking. According to the ADIS-IV ratings, none of the participants in the study were found to be abusing drugs or alcohol to the extent that it was a clinical problem and no participants reported using any type of anxiolytic medication. Five participants reported symptoms of depression but did not meet the DSM-IV criteria for major depression or a depressive episode.

According to the DSM-IV, features of Avoidant Personality Disorder (APD) and Social Phobia (generalized) tend to overlap extensively. As a result of this, it has been suggested that APD may be a more severe subgroup of generalized social phobia and may not warrant a separate diagnostic category, however, this issue has not been resolved (Hebert, Hope & Bellack, 1992; Schneier et al, 1991). Eight participants in this study (19%), four from HART, two from SCT and two from the control group could have also received a secondary diagnosis on Axis II of APD.

### Onset

Most participants in this study reported that their anxiety surrounding public speaking began during their early to mid-teen years, however, seven participants stated that they had felt anxious about these situations since elementary school, grades four and five, when they had been asked to do short speeches. Three participants reported remembering they had felt this kind of anxiety at around age four. These

findings are consistent with other studies that have found symptoms of social phobia occurring before the age of ten (Schneier et al, 1992, Crozier & Burnham, 1990).

### **Gender**

It has been found that more females (2:1) than males meet the DSM-IV criteria for Social Phobia (Schneier et al,1992). The ratio for this study was consistent with those findings as twenty-eight females and fourteen males participated.

### **Methodological issues and limitations**

This study has several limitations. First only one ADIS-IV interviewer was used and therefore no inter-rater reliability information is available for the diagnosis of social phobia. However, structured interviews such as the ADIS-IV, which use research diagnostic criteria, generally show a high reliability for diagnosing phobic disorders (Barlow, 1985; Barlow & Dinardo, 1995). Second, no long term follow up measures were taken. Therefore it is not known whether any gains made with the HART group will have a lasting effect or dissipate with time. However, taking into account the comments from members of the HART groups as to how much the technique helped them, it can be speculated that any gains made would not dissipate over time. Third, generalizability of these results may be limited to the population studied. This study targeted Socially Phobic individuals with the specific problem of public speaking anxiety. Hayes (personal communication) has found HART to have,

as might be expected, a much wider application than just public speaking anxiety.

Fourth, there was low to moderate concordant validity amongst the measurement variables. Since social phobia is a complex problem and not considered a unidimensional problem, the measures were related and were thought to assess some relatively unique feature of the social phobia syndrome.

### **Suggestions for future research**

Future studies should continue to examine the efficacy of HART with various anxiety disorders using different populations and larger sample sizes. The use of a video camera to tape sessions may be useful for participants feedback to see how they performed during a speech. More sessions may be used to ensure the participants have a good understanding of the procedures and follow up studies should be done to determine if the improvements made in therapy can endure as time goes by.

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**TABLES**

Table 3. Means and Standard Deviations for Subjective, Cognitive, and Behavioural Measures.

	<u>HART</u>		<u>SCT</u>		<u>Control</u>	
	Mean	SD	Mean	SD	Mean	SD
Subjective:						
<u>AAS</u>						
pre	53.28	4.42	53.85	3.00	51.28	4.02
post	42.21	10.82	49.35	6.34	49.07	5.18
 <u>BAI</u>						
pre	20.64	9.36	17.85	9.72	20.21	14.71
post	15.57	7.26	15.57	6.04	20.92	6.51
 Cognitive:						
<u>FNE</u>						
pre	21.50	5.12	24.50	4.87	23.71	4.06
post	15.57	7.26	21.35	8.35	20.92	5.53
 Behavioural:						
SAB	1.42	1.08	1.85	1.02	2.14	.66
SAA	3.71	.99	2.92	.99	2.64	.49

(Table 3 cont'd)

SRB	2.14	1.02	2.28	.82	2.50	.65
SRA	3.71	.61	2.71	.91	2.85	.84

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Note: SAB = speech anxiety before, SAA = speech anxiety after, SRB = speech rating before, SRA = speech rating after

**FIGURES**



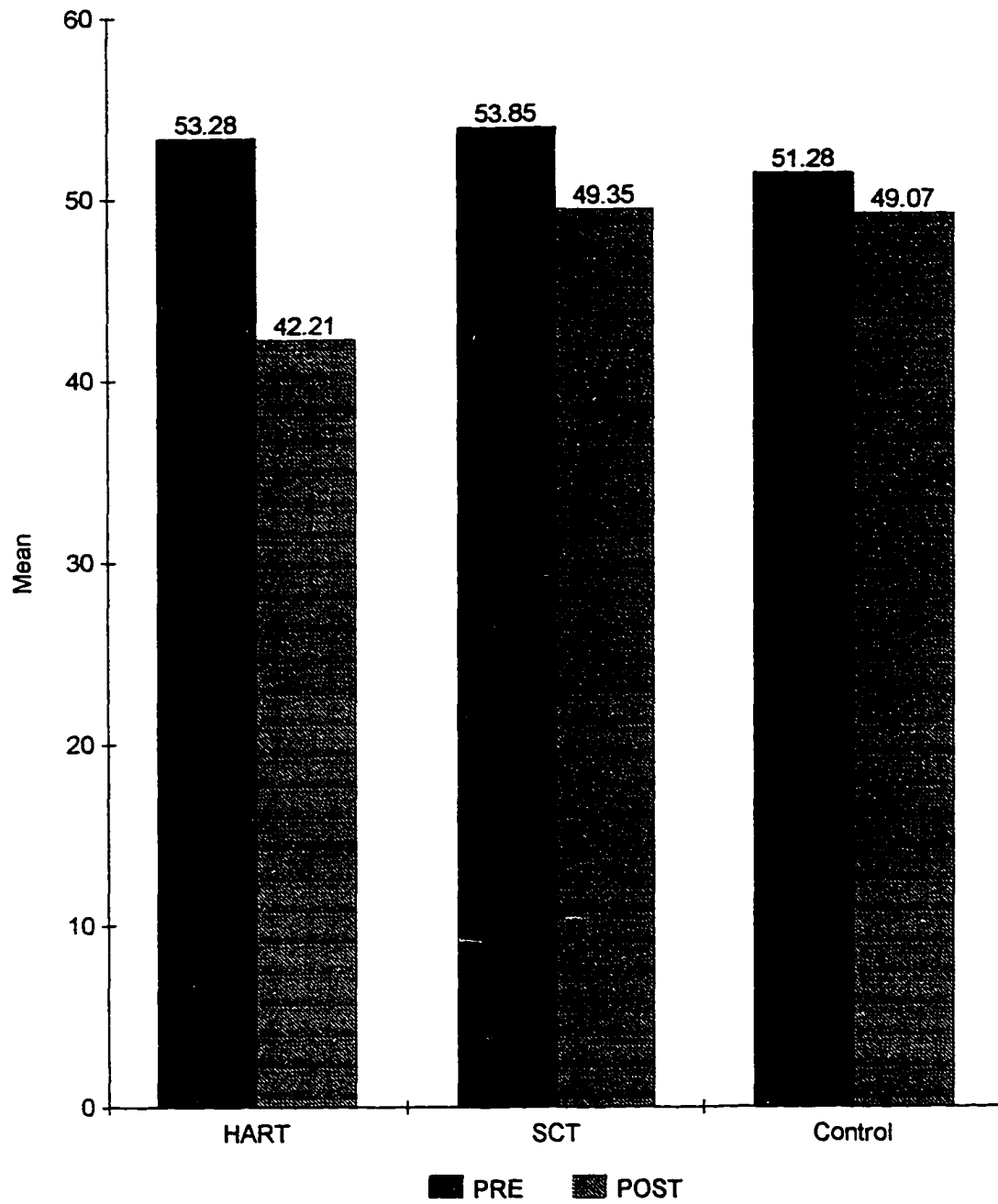


Figure 1. Means of pre and post test measures of the Audience Anxiousness Scale

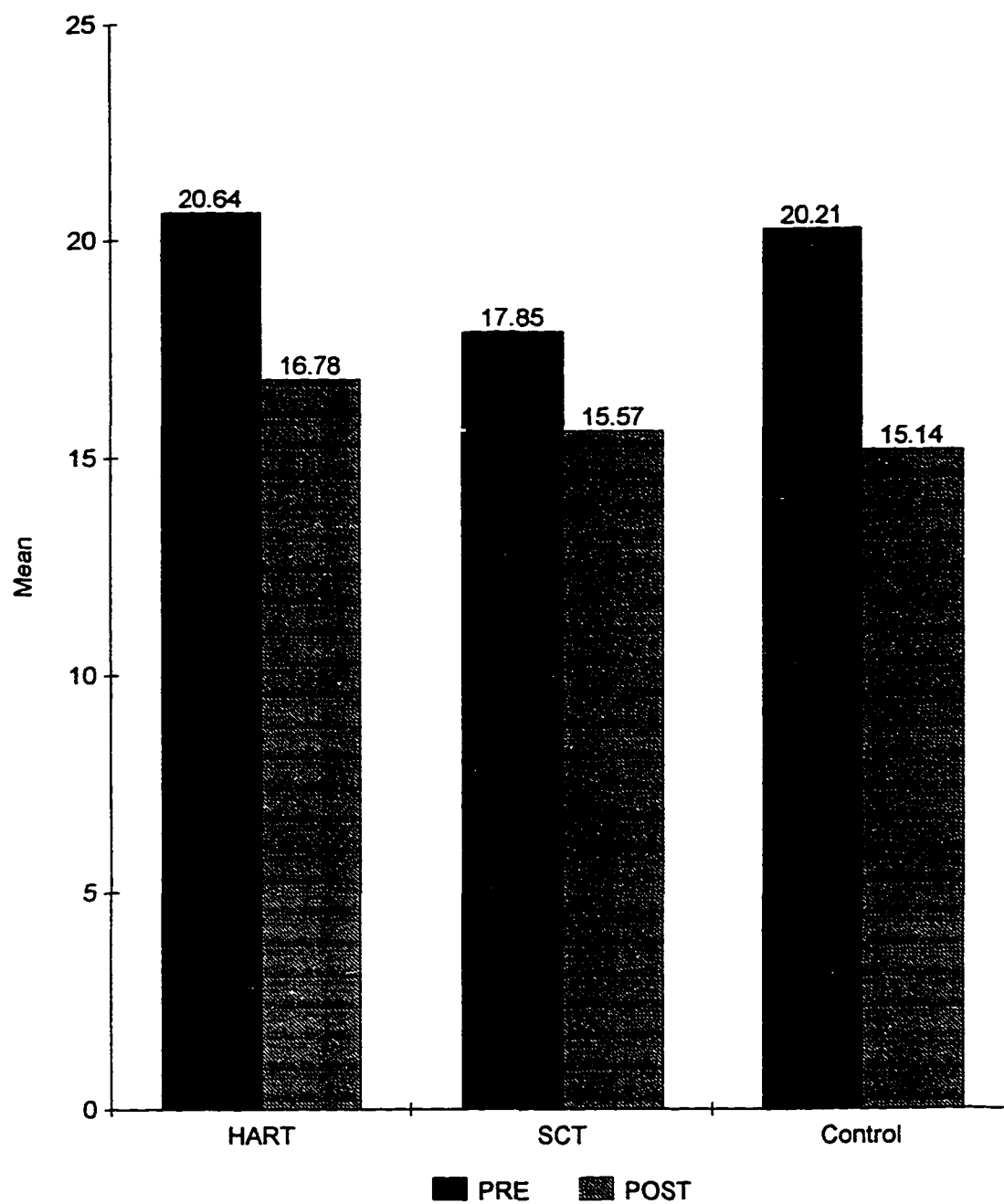


Figure 2. Means of pre and post test measures of the Beck Anxiety Inventory

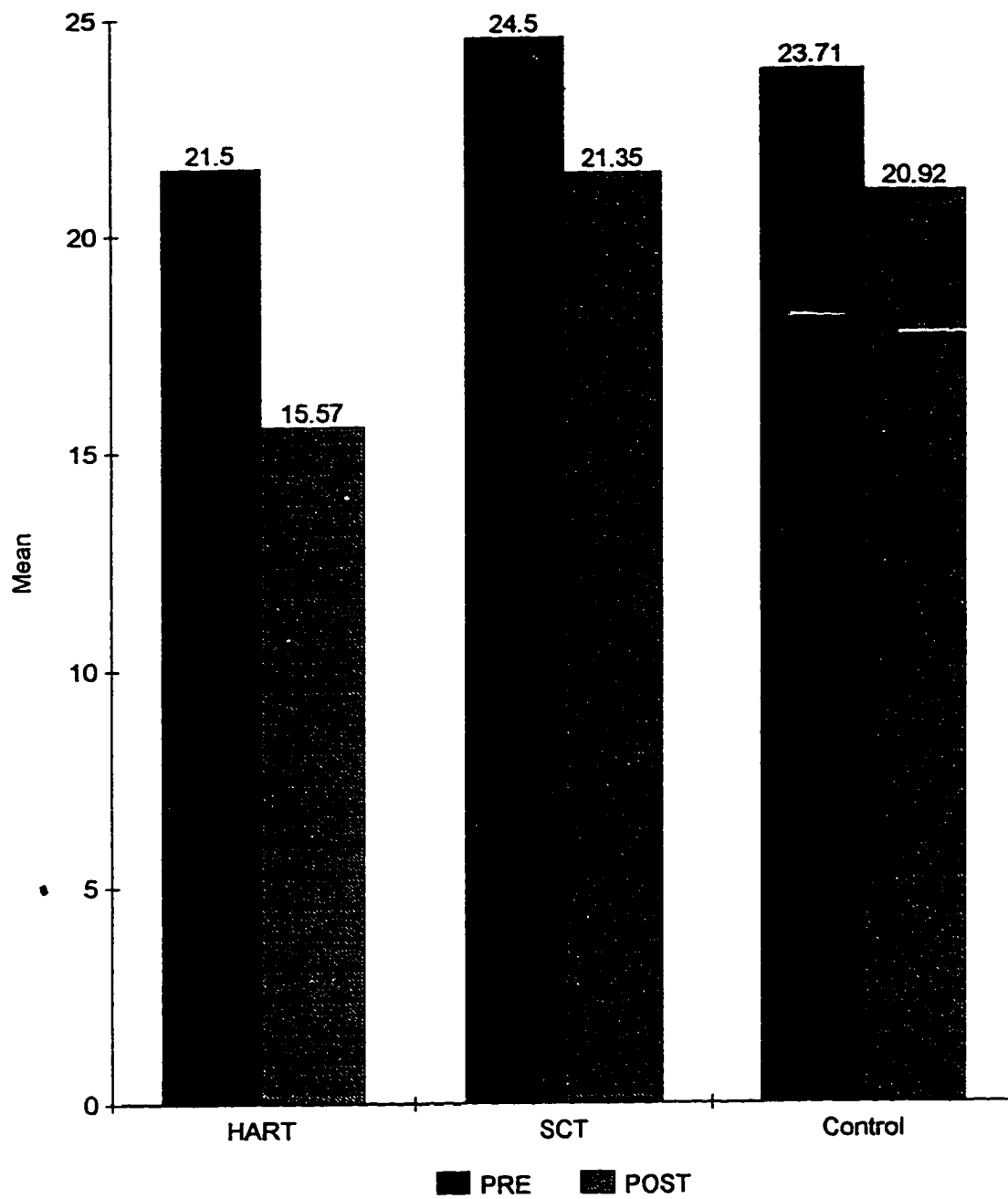


Figure 3. Means of pre and post test measures of the Fear of Negative Evaluation Questionnaire

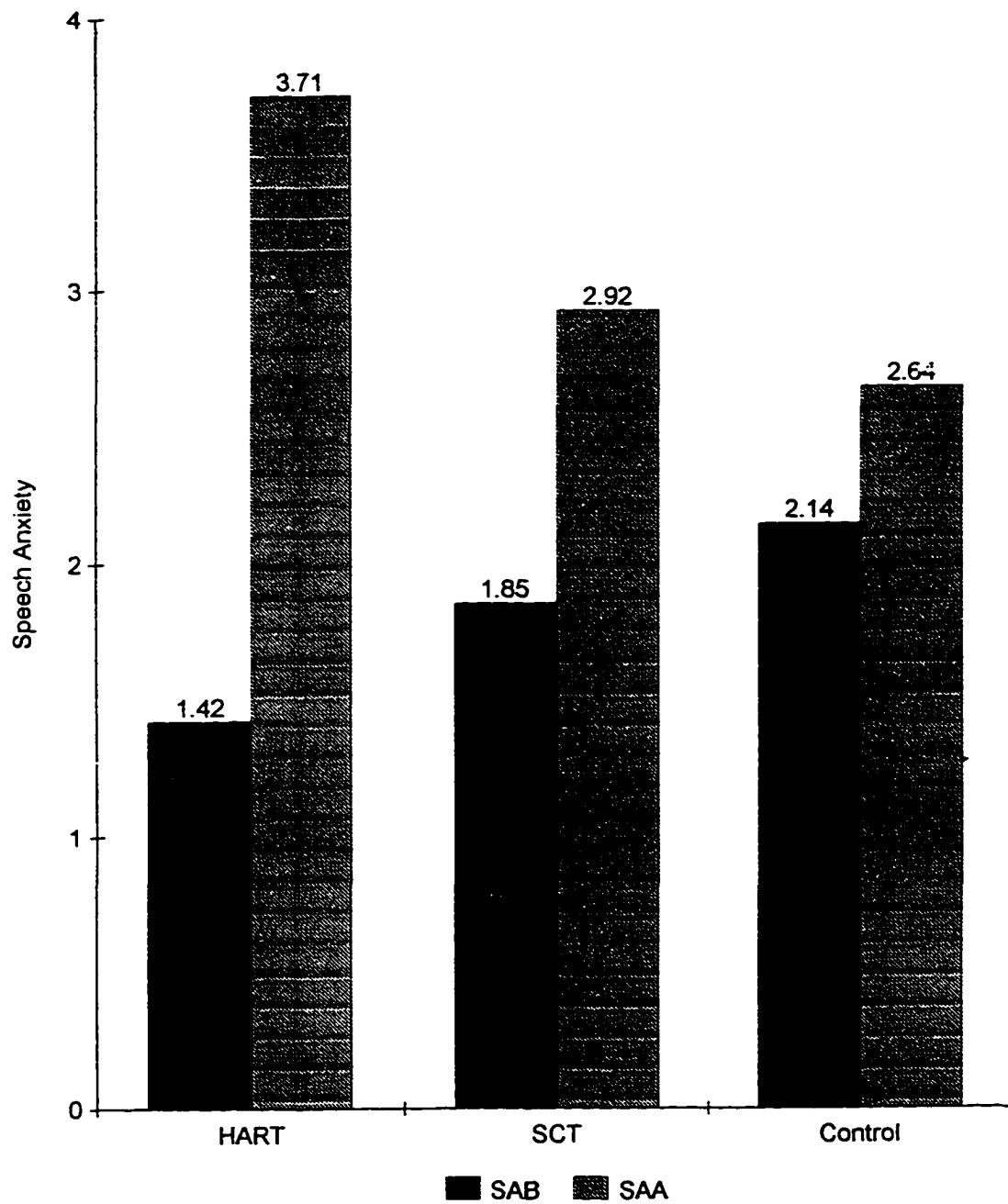


Figure 4. Means for Speech Anxiety Before and Speech Anxiety After

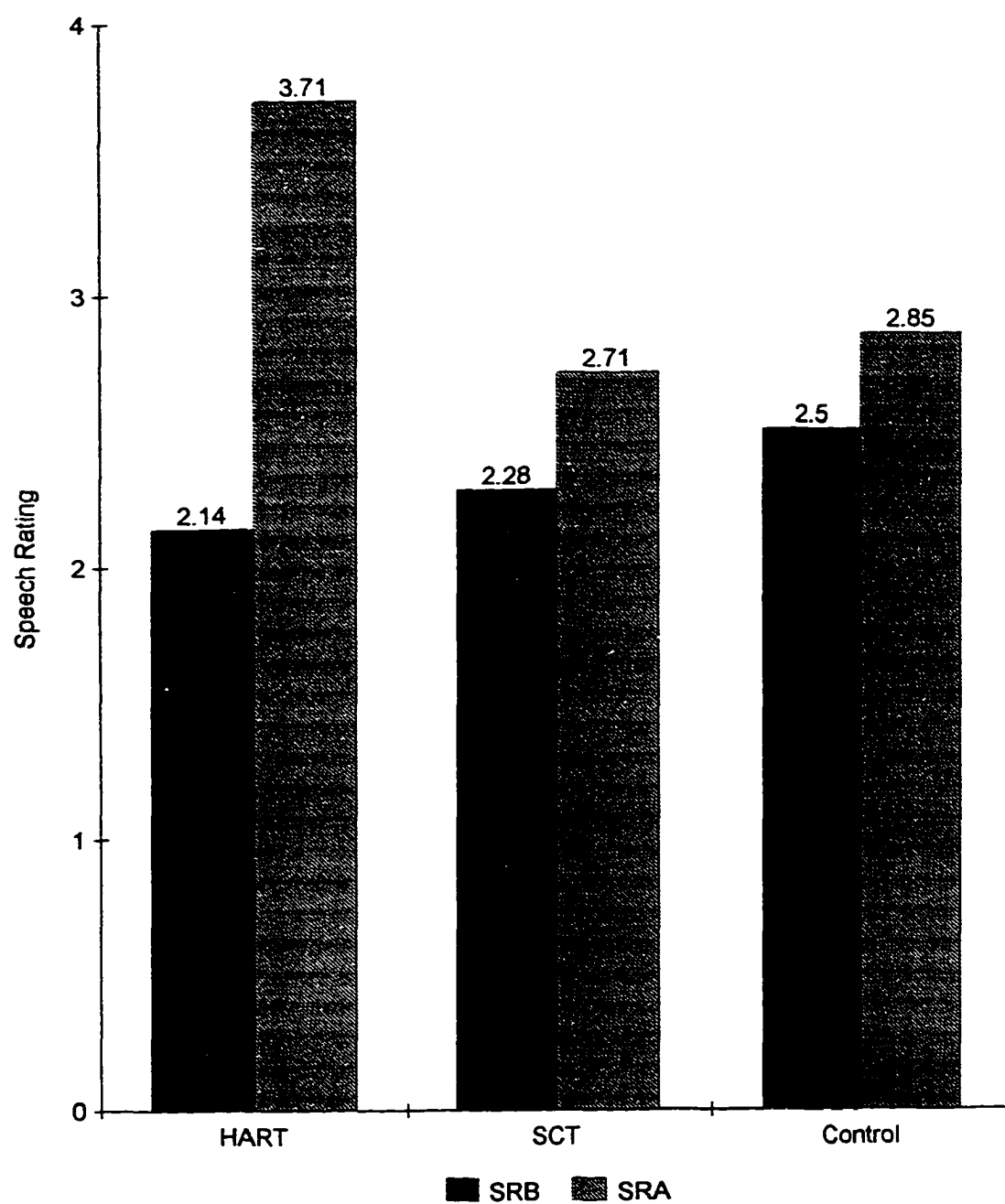


Figure 5. Means for Speech Rating Before and Speech Rating After

## **APPENDIX**

**APPENDIX A**

**CONSENT FORM**

**STUDY TITLE:** The Efficacy of Hayes Anxiety Relief  
Technique Versus the Self Control Triad in the  
Treatment of Public Speaking Anxiety

**Investigator:** Charmaine Stevens

Graduate Student

M.sc. Applied Psychology Program

Saint Mary's University,

Halifax, N.S.

**Supervisor:** Dr.Charles Hayes

Adjunct Professor

Psychology Dept.

Saint Mary's Univ.

Halifax, N.S.

## INTRODUCTION

You are invited to take part in a research study taking place at Saint Mary's University. It is important that you read and understand several guidelines and principles which will apply to all who participate in this study:

- 1) Taking part in this study will be entirely voluntary.
- 2) Personal benefit may not result from taking part in this study, but knowledge may be gained that will benefit others.
- 3) You may withdraw from this study at any time.
- 4) Should anxiety continue to be a problem with your ability to speak in public. then an additional four group sessions will be offered at no charge to the participants by Charmaine Stevens.
- 5) If at any point during this study you have questions or need to talk about something, the principle investigator will be available by phone or on campus. The research supervisor will also be available by phone.

The nature of this study is discussed below. You are urged to discuss any questions you have about this study with the researcher who explains it to you.

### 1) PURPOSE OF THIS STUDY

Social anxiety is a common experience for people at all stages of life. Adolescence in particular can be an especially difficult time. During this period there are issues of physical attractiveness, social competence, and fear of negative evaluation by others. School especially is the place for standards of

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dressings, talking, and inquisition by peers and adults. Peer relationships and approval become important at this time. The fear and anxiety associated with social situations can for some people be severe enough to be diagnosed as a social phobia. Severe anxiety in social situations such as public speaking, can interfere with academics, work, social competence, and social skills. This study involves answering several questionnaires and participating in therapy sessions. The results of the questionnaires and therapy sessions will be used to help establish what procedures may be best able to help people cope with public speaking anxiety.

#### CONDITIONS OF INVOLVEMENT

You must satisfy the following conditions to qualify for this study:

- 1) enrolled as an undergraduate student at Saint Mary's University
- 2) are between the ages of 18 and 35

#### SCREENING FOR PARTICIPATION

The decision as to whether you can take part in this study will be determined by a structured clinical interview designed to assess the severity of your social anxiety (re:public speaking).

#### 4) PROCEDURES

This study will measure your level of public speaking anxiety. You will be asked to complete several questionnaires which will measure the different aspects of public anxiety. The questions will deal with what you think, how you feel, and your

anxiety during public speaking. Participation will not involve any physical procedures or tests. You will be asked to participate in a therapy procedure one hour a week for four weeks designed to address the issue of public speaking anxiety.

#### 5) RISKS, BENEFITS, AND DISCOMFORTS

There are no medical risks involved in this study. You will be asked to fill out questionnaires, take part in a brief speaking task, and to participate in therapy sessions.

Personal benefit may not result from participating in this study but the knowledge gained may help future clients with the same problem. You may acquire some insight and information about public speaking anxiety which may help you in the future.

#### 6) COSTS

There will be no costs incurred by you. Everything needed to complete this study will be provided.

#### 7) OTHER PERTINENT INFORMATION

CONFIDENTIALITY: Any information which is collected about you in this study will be kept confidential, and if the results are published, you will not be identified in any way. Information will only be available to the principle investigator, a research assistant and the thesis committee. All information will be coded with a number, no names will be used.

PROBLEMS AND QUESTIONS: any problems or questions can be directed

to Charmaine Stevens, or leave a message with the psychology dept. secretary. At the end of this study you are entitled to know the results. You can keep a copy of this consent form for your records.

**STOPPING THE STUDY:** You may withdraw from the study at any time even after signing this form with no consequence to you at all.

**The Efficacy of Hayes Anxiety Relief Technique Versus  
the Self-Control Triad in the Treatment of Public  
Speaking Anxiety**

Please complete the item below

I have read this CONSENT FORM and have had the opportunity to have my questions answered regarding this study. I hereby freely and voluntarily consent to take part in this research study.

Signature of Subject: \_\_\_\_\_ Date: \_\_\_\_\_

## **APPENDIX B**

### **Description of the HART procedure**

#### Instructions to clients:

The Hayes' Anxiety Relief Technique (HART) is a procedure which will help you to manage your anxiety and to recognize those thoughts and behaviours which may be contributing to and maintaining anxiety. There are three major components to anxiety - 1)Physiological arousal associated with physical sensations, 2)thoughts or self-statements; 3) behaviours which may include trying to escape or completely avoid feared situations. These components usually interact in such a way that your anxiety level increases. Thinking certain thoughts such as " What if I lose control!" typically results in an increase in physiological arousal, for example, increased heart rate, sweating and dry mouth. As a result of the increased physiological arousal, your behaviour as well may be effected by increasing your motivation to escape from the situation.

HART consists of the following techniques:

1)Monitoring Self-Talk: Self-talk refers to what you are saying to yourself internally. There may be times when you are aware of what you are saying to yourself (e.g.

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really believing that you are going to lose control). At other times these thoughts occur so rapidly and are so automatic that you are not aware of their influence. This type of negative self-talk only serves to create or maintain anxiety. As well you are also anticipating something terrible happening to you before it actually does.

A common term for this anticipation is "worry". What you worry about may be different from situation to situation. In one situation you may be afraid of being embarrassed, in another you may be afraid of losing control.

Often in these situations you might try to tell yourself what not to do. For example, you may be saying to yourself "Don't worry!". This kind of self-instruction is not particularly effective. In fact it often increases levels of anxiety and generates a feeling of negativity in anticipation of the situation you fear. This is often referred to as anticipatory anxiety.

Instead of telling yourself in a negative manner what you should not do, a more effective method is to give yourself positive, supportive instructions as to what you should do. This is a way of refuting the negative statements you are saying to yourself, reducing your anxiety, and developing a sense of control.

Anxiety management: High levels of anxiety may often promote and exacerbate feelings of loss of control over emotions. As well as feeling out of control, you may also feel vulnerable and afraid of making a fool of yourself. As mentioned previously, feelings of fear involve a total body reaction. As this fear develops, physiologically, people often report increased heart rate, perspiration, respiration, and

dryness of mouth. Often these symptoms are accompanied by racing thoughts and the desire to avoid or escape from the situation.

For each person there is often a set of behaviours which routinely accompany feelings of high anxiety. These behaviours may act as a cue reinforcing the idea that you are, indeed, anxious. These cues often include talking faster, louder, and speaking in a higher tone.

You can learn to control your voice by speaking slowly and softly when you notice that you are talking louder and faster. Speaking slowly, softly, and in a lower tone of voice is typically associated with feeling relaxed and comfortable. By contrast, these cues will help to calm you and to lessen your anxiety.

Another signal of heightened anxiety is an increase in motoric behaviour such as hand wringing, swinging a leg back and forth, rocking, or foot tapping to name just a few. By monitoring your behaviours when you become anxious, you will start to recognize and become familiar with those behaviours which signal that you are anxious. By monitoring these behaviours you may also help to identify the antecedents or cues which trigger an increase in your anxiety.

Generalized tension and anxiety may be reduced by physically controlling muscle tension. This involves trying to keep the body as relaxed as possible. Tense muscles tend to restrict breathing and to exacerbate feelings of anxiety. Learning how to slow down your breathing rate during periods of anxiety can help you to relax and reduce some of the physical symptoms you are experiencing. The process of controlled breathing involves the following: upon inhalation you start counting at one,

when breathing out you think about relaxing, on the next inhalation you count two, and upon exhalation you again think about relaxing. This continues until a count of ten is reached and then you continue the process would by counting back down to one. Breathing should be done through the nose as this helps you to breathe more slowly. You should inhale for a count of three seconds and exhale for a count of three seconds.

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## APPENDIX C

### Description of the Self-Control Triad

Instructions to clients:

The Self- Control Triad (SCT) is a procedure used to reduce your anxiety. SCT consists of three techniques - thought stopping, relaxation breathing, and a reinforcement procedure.

#### Thought Stopping:

In this step you will learn to how to stop the thought(s) which we have identified and agreed upon as being undesirable. I am going to ask you to close your eyes and imagine that you are having that undesirable thought. When you start to have this thought, I will ask you to raise your right index finger. When you have done this I will yell "Stop!" I will then ask you what happened when I yelled "Stop!" What usually happens is that the undesirable thought will go away because you cannot think of more than one thing at a time. We will repeat this part of the procedure only this time I will wait a few seconds before I yell "Stop!" If the thought goes away again this time, the next step is for you to practice saying



stop to yourself in your head.

Close your eyes. Now I would like you to picture the word "stop" in your mind and get a good image of the word. Once you have a good image of the word "stop!" I want you to imagine that you hear yourself yelling "stop!" As well, tell yourself to get a hold of yourself and be in control. Keep practicing this until you can get 'stop' very clearly in your mind then open your eyes. Now practice this procedure with your eyes open.

#### Relaxation breathing

In this step, you will learn how to relax your body. I would like you to close your eyes, take a deep breath, hold it, and try to relax your whole body while exhaling slowly through your nose. Try to imagine your muscles relaxing, feel it start from the top of your head, to your face, shoulders, chest, stomach, legs, and finally to the tips of your toes. Imagine a wave of relaxation washing over you.

Be sure not to exhale too rapidly. Repeat this procedure until you are able to relax or can feel an improvement. You should practice this procedure with your eyes open as well.

Once you have practiced the first two steps you are now ready to put the two together. Close your eyes, say the word "stop!" to yourself and then do the relaxation breathing. Now open your eyes. When doing these steps try not to overlap saying "Stop!" and starting the relaxation breathing. Once you can do these

steps smoothly, practice them with your eyes open.

### Reinforcement procedure

In this step you will be taught how to imagine a pleasant scene like lying on the beach or playing music. Something which you find to be enjoyable and pleasant. The purpose of this step is to distract you from thinking the undesirable thought(s). As well, the pleasant scenes which you imagine produce feelings which are opposite to those of anxiety. The idea being that you can't feel anxious and relaxed at the same time! This step also acts as a positive reinforcement for doing steps one and two.

Close your eyes and imagine one of the scenes we identified as being pleasant. Try to make the picture as clear and vivid as possible. When the picture is as enjoyable and pleasant as you can possibly make it, I will ask you to raise your right index finger. Once you can do this step with your eyes closed, practice it with your eyes open.

When you feel comfortable with these procedures, the next step is to put the three together. I would like you to imagine that the undesirable thought is occurring and do the three steps, saying "stop!", doing relaxation breathing, and then experiencing the pleasant scene. Concentrate on what you are doing, take your time, and try not to let the three parts overlap.

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## APPENDIX D

### **Anecdotal Comments**

The members of the HART groups during the course of treatment expressed a lot of enthusiasm for this technique. There were two people who could not do the pretest of the Graded Speaking Test before doing HART but who did it successfully after HART with much less anxiety. They both stated that they found HART such a simple technique to learn and that they actually enjoyed doing it. The enthusiasm the groups displayed at each session was wonderful. One man had a very thick Indian accent and spoke very fast when he was anxious. During the sessions he was able to recognize what he did when he became anxious, such as speaking quickly, and was able to by the end of the three sessions slow his speech down and manage his level of anxiety well enough that he was able to get through a presentation. In summary the sessions were very positive and all members found that HART helped them to cope with their anxiety in everyday situations not just during public speaking.