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**A Comparison of Hypnotic, Non-Hypnotic and Subliminal
Message Placebo Treatment Conditions on the Success of a
Smoking Cessation Program**

by

Thomas J. Mondoux, B.A.

**A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of**

Master of Arts

Department of Psychology

**Carleton University
Ottawa, Ontario
November 13, 1992
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Thesis Supervisor

Chair, Department of Psychology

Carleton University
January 14, 1993

ABSTRACT

54 subjects, 25 males and 29 females, ages 19-62 (mean age in years 29.9) were recruited from advertisements placed in two local newspapers. Subjects were then randomly assigned to one of four treatment conditions which included hypnotic and non-hypnotic treatments and a subliminal message placebo. The hypnotic condition combined various imagery and non-imagery based smoking cessation strategies, taken from the existing literature (e.g., Spiegel, 1970; Stanton, 1978). The non-hypnotic condition involved the same protocol without a preliminary hypnotic induction procedure, and was also labelled "cognitive restructuring". The subliminal message placebo condition was labelled "subconscious reconditioning and involved informing subjects that they would hear music embedded with subliminal messages that were designed to help them quit smoking. There were in fact no such imbedded messages in the placebo condition. Each treatment condition was administered in two sessions. All subjects were followed up for three months. Subjects rated the number of cigarettes smoked each day and at the end of the study were assessed for hypnotizability. Abstinence rates at the end of the study were zero for all groups. There were no significant differences in smoking reduction between any of the four conditions. Neither hypnotizability nor questionnaire assessments of motivation to quit correlated significantly with treatment outcome.

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The use of tobacco products and their negative effects on health is nowadays a worldwide concern. For over two decades, beginning in the early sixties with reports from the Surgeon General in the United States, the Royal College of Physicians in England, and by Health and Welfare in Canada, various organizations have continued to compile evidence on the negative consequences of use and exposure to tobacco smoke.

International statistics from the World Health Organization (1986) hold cigarette smoking accountable for one million deaths a year. Other estimates place the number of deaths at closer to 2.5 million, or 5% of all deaths. It is also estimated that tobacco smoking is a major contributing factor in 10% to 25% of all deaths in Europe and the United States, and in about 20% of deaths among Canadians aged 35 to 84. In the United States, smoking kills thirteen times more people than hard drug abuse and eight times more people than fatal automobile accidents. Health care costs for smoking can also run into the billions of dollars, and can account for 3%-9% of the total health care budget depending on the country (Baker, 1986).

Over the years smoking has also been held responsible for increases in certain cancers, notably lung cancer, but also mouth, larynx, esophagus, bladder and pancreas. In addition smoking has been causally implicated in coronary heart disease, bronchitis, emphysema, peptic ulcers, retarded fetal growth, lower birthweights, and increases in neonatal deaths and stillbirths (Baker, 1986).

Smoking Cessation Methods:

The realization that smoking is inherently harmful has resulted in a body of research aimed at assessing the effectiveness of cessation methods. The types of intervention strategies used in this research and their effectiveness vary widely. In a 1987 review of over a decade of smoking research from Canada and the United States, Schwartz classified the smoking interventions into four major categories.

- 1) Approach type: i.e., medical or educational.
- 2) Investigator/ leader type: i.e., psychologist, doctor.
- 3) Organization type: i.e., profit or non-profit, religious.
- 4) Method type: i.e., self-care, hypnosis, behavioral.

Schwartz also outlined several serious methodological errors that plague this research. These include, improper follow-up procedures, confusion over the exact method used, lack of proper control groups, and concern about the validity of self-report indexes of smoking cessation (Schwartz, 1987).

Many cessation methods have been developed, each with its own claim of abstinence or reduction rates. Here are some examples: Auricular staplepuncture, 642 subjects 61% abstinent at the 6 month follow-up (Sacks, 1980); rapid smoking and education seminars, 172 subjects 28% abstinent at the 6 month follow-up (Parker & Younggren, 1981); SmokEnders group method, 167 subjects 27% abstinent at the four year follow-up (Kanzler et al., 1976); fear

videotape and quit smoking booklet, 28 subjects 14% abstinent at the 3 month follow-up (Sutton & Eiser, 1984).

For a review of the various methods and their abstinence or success rates, the reader is referred to Schwartz (1987). Overall however, cessation methods have achieved rather poor results. This can be explained by the fact that smoking is such a complex behavior, determined and supported by the interaction of cognitive, social, economic and physiological variables (Spanos & Sims, 1989).

Hypnotic Smoking Cessation Methods

The use of hypnotic smoking cessation treatments has grown in popularity over the years. Despite this growth in popularity hypnotic cessation research, especially the earlier reports, is full of methodological errors. More specifically, hypnotic research is flawed by confounding variables, lack of control groups, poor follow-up procedures, non-replicable experiments, difficulty in determining what type of hypnotic method was used and poor measures of smoking behaviour (Katz, 1980). In addition to these methodological shortcomings, published reports differ greatly in reported rates of abstinence. Holroyd (1980) discovered rates in the literature ranging from 4% to 88% (35% being the mean) all with 6 month follow-ups. Another review by Katz (1980) reported studies with abstinence rates ranging from 0% to 100%. Another example is Spiegel who in 1970 developed his own one-session method with which he obtained a 20% abstinence rate.

Post-Induction Suggestion

Another obstacle encountered when evaluating hypnotic cessation methods, in addition to the many methodological problems in the literature, is the great variety of post-induction suggestions used. Katz's (1980) review pointed out that hypnotic treatment could refer to many different procedures and methods. As examples he offered direct suggestions to quit smoking, amnesia (forgetting exact location of cigarettes) and experiencing rewards or punishment for tobacco related behaviours (Katz,1980).

While many different post-induction suggestions are found in the literature, they can be classified into two types; individualized and standardized. Individualized suggestions are specifically tailored to the patient's needs, fears, desires or goals for quitting. Long (1986) reviewed studies of several researchers who used individualized post-induction suggestions (e.g. Kline, 1970; Nuland & Field, 1970; Sanders, 1977; Watkins, 1976), and found that these studies had relatively high abstinence rates, ranging from 50% to 80%. However, Long (1986) has emphasized that it was not possible to determine the specific components of these individualized suggestions that were responsible for the high abstinence rates.

The second type of message, the standardized post-induction suggestion, has been used widely in clinical settings. One of the reasons for its popularity in research, is that the procedures are easily replicable. Several researchers have developed their own standardized messages (e.g. Stanton, 1978; Hall & Crasilneck, 1970).

However, the Spiegel (1970) message in either its original or modified form is by far the most commonly employed standardized procedure (e.g. Perry et al., 1979; Hyman et al., 1986; Rabkin et al., 1984; Spanos et al., 1992).

The primary strategy in Spiegel's post-induction message is a three point affirmation, by the smoker, of a commitment to respect and protect his/her body. The three key points are:

- " 1. For your body, not for you, for your body smoking is a poison.
- 2. You need your body to live.
- 3. You owe your body this respect and protection."

(Spiegel, 1970, p.241)

Along with the use of self-hypnotic procedures, taught by Spiegel himself, the smokers were told to repeat these three points to themselves several times a day. The "self-hypnotic procedures" (eye closure and self-relaxation) were assigned to reinforce the three points and therefore distract subjects from the urge to smoke. In his initial study involving 615 subjects, Spiegel reported a 20 % abstinence rate at the six month follow-up, with non-respondents being considered as failures. Unfortunately, the Spiegel (1970) study lacked a no-treatment control condition. Other studies that have used his method have obtained various abstinence rates: Perry et al. (1979) 4% abstinent at 6 months; Hyman et al. (1986) 40% abstinent at 3 months; Rabkin et al. (1984) 23% abstinent at 6 months; Spanos et al. (1992) experiment 2, 5% abstinent at 3 months; Spanos et al. (1992) experiment 3, 3.8% abstinent at 3 months. Two studies that

combined Spiegel's message with another, or adapted it achieved abstinence rates of 20% at 6 months (Frank et al., 1986) and 45% at 48 weeks (Williams & Hall, 1988).

Hall & Crasilneck also developed in 1970 a method, "...in which hypnosis could be used as a means of controlling the habit of cigarette smoking without excessive frustration or craving...and with an efficiency of treatment such that cost would not be excessive and time would not be a limiting factor in the number of people who could be treated." (Crasilneck & Hall, 1985, p.224). Their method, which has remained relatively unchanged over three decades of clinical application, involves, first a screening interview for the patient. The purpose of this is twofold; to exclude those with any major psychological problems, and to answer any questions concerning hypnosis and trance induction. Patients are also encouraged to communicate any discomfort or disturbance at any time during their treatment. Before they receive the specific suggestions for smoking cessation, patients are also given two tests aimed at demonstrating to clients that they can achieve adequate "hypnotic depth". The tests are: glove anesthesia (tested on the of fingers with a blunt nail file) and arm catalepsy (Crasilneck & Hall, 1985). Examples of the specific suggestions given for cessation are; "You simply will not crave for cigarettes again...You will block the craving for tobacco. You will be relaxed and at ease...You will be able to give up this dirty and unhealthy habit..." (Crasilneck & Hall, 1985, p.227).

As for success rates achieved with this method, Crasilneck in a 1990 article stated that, "In the past 35 years...The most successful method has been to see the patient for 3 consecutive days with a follow-up about 3 weeks later. With this technique about 81% stopped smoking." (p.147).

Another standardized set of suggestions to eliminate the tobacco habit was developed by H.E. Stanton in 1978. His one session method has six components. These are in order: the establishment of a favorable "mental set" on the part of the patient; the hypnotic induction; ego-enhancing suggestions; the specific suggestions to quit smoking; the use of an adapted version of the "red balloon" visualization technique; and finally success visualization (Stanton, 1978).

The "mental set" refers to properly motivating the patient for the task ahead, since Stanton is adamant that, "...the fact that the therapist believes the patient is able to stop smoking immediately and permanently...is...likely to maximize this expectation." (1978, p.23). With regards to the use of the hypnotic induction Stanton (1978) maintains that it will enhance the patients expectations and therefore increase the treatment's efficacy, although his own experience has taught him that patients will accept suggestions just as easily in the waking state. After the hypnotic induction the patient receives a set of ego-enhancing suggestions. These suggestions inform the patient that he or she will feel healthier, more relaxed, more self-confident, independent, etc... Interwoven with these ego-enhancing suggestions are also some anti-smoking

suggestions. The latter inform the patient that smoking is detrimental to their health and will prevent him or her from achieving the benefits of the earlier ego related suggestions. The next set of suggestions are those directly concerned with the patient's smoking. Examples of these suggestions are: "You are...completely confident that you are going to overcome the cigarette smoking habit...Smoking is a foolish, stupid habit...Know in your mind, now, that you are able to do this..." (Stanton, 1978, pp.25-26). Immediately following these suggestions, the patient is presented with an adaptation of Walch's (1976) red balloon visualization technique. Patients are directed to imagine themselves throwing away all their cigarettes, their needs, and their desires related to their smoking habit, into a large basket. This basket is then closed shut, and attached to a large red balloon. Finally it is visualized floating out of view (taking with it all their desires, feelings, and needs related to smoking) into a clear blue sky. The final stage in Stanton's (1978) technique is success visualization. Here the patient is asked to imagine him or herself in situations (which previously involved smoking) being totally calm, confident and relaxed, and having a good time, but without smoking.

Stanton (1978) used this one-session approach on 75 patients over a two year period. 60% stopped smoking immediately following the treatment, although at the six month follow-up only 45% were still abstinent.

Number of Hypnotic Sessions

In the hypnotic smoking treatment literature there are debates as to the optimal number of sessions that are necessary to achieve a therapeutic effect. Proponents and pioneers of the one session approach to cessation are Spiegel (1970) and Stanton (1978). The latter achieved a 45% abstinent rate (n=75) at 6 months in comparison to Spiegel's (1970) 20%. Williams & Hall (1988) combined these two methods and achieved a 45% abstinent rate at 48 weeks. Spiegel's (1970) rationale for the single session approach is that, "...it provides immediate impact...", and, "...will help motivate the hard core smoker to give up his habit." (p.236).

According to Williams and Hall (1988), "Single-session hypnosis has received little attention in a literature dominated by multi-modal studies." (p.205). However, they believe that single-session programs have certain advantages when compared to more lengthy and complex multi-modal ones. These benefits are: cost; greater compliance with treatment procedures; and less subject mortality (Williams & Hall, 1988).

Researchers who favor multiple sessions (e.g. Holroyd, 1980; Hyman et al., 1986; Nuland & Field, 1970) believe that four seem to be adequate. According to these investigators multiple sessions are needed to ensure that relapses are avoided and any gains made fortified. Nuland and Field's (1970) experiment (no control group) used individualized suggestions, and achieved a success rate of 60% abstinence.

Watkins (1976), in response to the Nuland & Field (1970) experiment, developed her own five-session technique. Watkins refers to her technique as the 'Concentration-Relaxation Technique'. She refrained from using the term hypnotic in describing her study, "... since the depth of trance is not important for this technique, the word 'hypnosis' is eliminated..To avoid preconceptions commonly associated with the word.." (Watkins, 1976,p.382). Subjects are told that this procedure, "...is a parahypnotic or hypnoidal...because no depth of trance is necessary, only a state of relaxation." (p.382). The first session involves obtaining all pertinent information concerning the subject's smoking history. This information is used to create the individualized treatment that the subject will receive during the next four sessions. Each subject has designed for him or her, a personalized set of three suggestions and two visual images to enable him or her to quit smoking. Watkins (1976) utilizes several suggestions and imagery scenes, with some similarity among them but only in the general theme. Every subject also receives the 'Relaxation Suggestion' at the beginning of each session; a deep breathing exercise designed to replace the relaxing feelings usually derived from smoking. Examples of these suggestions and imagery are: Victory suggestions (feelings of victory from winning over the cigarette dependance); cost imagery (calculating the money wasted on cigarettes); tobacco smell (unpleasantness of cigarette smoke).

Of the 48 subjects who underwent this five session approach, only 36 remained at the final follow-up. Of these 36 only 24 (67%) were abstinent. This abstinence rate becomes only 50% if dropouts

from the original 48 subjects are included, a fact which Watkins fails to mention. In her summary of this clinical report Watkins (1976) concluded that perhaps the most effective factor was the intense therapist client relationship, made possible by hypnosis which, "...strongly influences the final outcome independently of the specific technique employed." (p.388).

A set of three studies conducted at Carleton which employed the Spiegel (1970) message failed to demonstrate any benefits with respect to smoking reduction or abstinence rates, when the Spiegel (1970) message was administered (with and without a prior hypnotic induction) in single or multiple sessions. Overall abstinence rates in the two studies which used the Spiegel message in a single session format were 5.95 and 3.8 percent respectively. The other study which administered the Spiegel (1970) message over four sessions achieved an overall abstinence rate of 5 percent (Spanos et al., 1992).

Contribution of Hypnosis

In hypnotic cessation research, there are few studies that have sought to address the question of the contribution of hypnotic procedures to the success or failure of cessation methods. Holroyd, in her 1980 review, concluded that the reasons for the effectiveness of hypnotic procedures are up to 'conjecture'. Furthermore, a confounding factor in many hypnotic treatments is their resemblance to some behaviour therapy techniques. Long (1986) observed that attempts at isolating the effects of hypnotic procedures are few and

usually experimentally unsound. He suggested that the complexities of hypnotic suggestions and treatment variables has made proper evaluation extremely difficult.

A study by Hyman et al. (1986) attempted to compare a hypnotic treatment with other methods in a methodologically sound manner. This experiment compared the Spiegel (1970) hypnotic message, a focussed smoking method, and an attention placebo. The three treatment conditions were given over four sessions. A wait-list control group was also included. The results indicated that all three treatments were significantly more successful than the control, but that the differences between the treatment groups were non-significant. Hyman et al. (1986) concluded that the lack of a significant difference in the abstinence rates between the hypnosis and the attention-placebo groups (both approximately 40% at the six month follow-up) was indicative of a lack of support for the claim that hypnotic treatments are responsible for smoking cessation success.

For a comprehensive review of hypnotic cessation techniques, alone and combined with other methods, the reader is again referred to the Schwartz (1987) evaluation of smoking cessation research.

Placebo Treatment Conditions

A variety of placebo manipulations have been employed in the non-hypnotic smoking cessation literature. These include comparing nicotine gum (and sometimes another condition) to a placebo gum (e.g. Hall et al., 1987; Killen et al., 1990); placebo acupuncture

(Lamontagne & Gagnon, 1980); and placebo medication (Schwartz & Dubitsky, 1967). There are also placebo manipulations in the hypnotic smoking cessation literature. Barkeley et al. (1977) compared rapid smoking, hypnosis and an attention placebo condition (subjects were told to quit "cold turkey". At the 9 month follow-up abstinence rates were 42%, 25% and 0% respectively. A study by Hyman et al. (1986) already discussed, used a similar attention placebo condition in their experiment but achieved a 40% abstinence rate at the six month follow-up. MacHovec & Man (1978) compared individual and group hypnosis to true site and placebo acupuncture treatments. Abstinence rates for their experiment at the six month follow-up were; 50%, 40% 25% and 0% respectively. To date there has been little work evaluating the credibility of the placebo procedures employed in this literature.

Motivation

Several researchers have examined the impact of motivational factors on smoking cessation methods (e.g., Perry et al., 1979; Wadden & Anderton, 1982; Curry et al., 1990). Perry et al. (1979) reported that subject motivation was the main determinant of smoking cessation. Those researchers developed a questionnaire to assess motivational factors. The results of their study indicated that the three questionnaire items that best predicted success were; current need for cigarettes, desire to quit smoking, and the number

of reasons for smoking. The strongest predictor was the desire to quit smoking (Perry et al., 1979).

Theoretical Conceptualizations of Hypnosis

There are two major opposing theoretical schools of thought that seek to explain hypnotic phenomena. The first is the state or the special process paradigm and the second is termed the non-state or cognitive social-psychological paradigm.

The special process paradigm maintains that hypnotic behaviour differs in several important aspects from non-hypnotic behaviour. Therefore, in order to explain these differences the existence of special psychological or physiological processes must be posited. Over the years various psychological mechanisms (e.g., dissociations between cognitive systems, amnesic barriers) have been proposed to explain phenomena (e.g., amnesia, analgesia).

The social-psychological view holds that hypnotic phenomena, are similar to other forms of social behaviour and can be understood without recourse to special processes. In this paradigm hypnotic behaviour is, "...purposeful, goal-directed action that can be understood in terms of how the subjects interpret their situation and how they attempt to present themselves through their actions" (Spanos, 1986, p.449).

With respect to the clinical applications of hypnosis, there exists a debate concerning the relationship between hypnotizability or hypnotic susceptibility and treatment outcome. Hypnotic susceptibility is defined as the degree of responsiveness to

standardized suggestions exhibited by subjects following a hypnotic induction procedure (Bertrand, 1989). Some researchers (i.e., Bowers, 1977) have argued that highly hypnotizable subjects will derive more benefits from any treatment that employs suggestive techniques, than will insusceptible subjects.

Research conducted on the relationship between hypnotizability and treatment in smoking cessation has yielded rather contradictory results. Holroyd (1991) lists several studies that claim to have found a positive relationship between hypnotizability and outcome. Although it is interesting to note that the same H. Spiegel, in his 1970 experiment measured hypnotizability but considered it somewhat unimportant. In his view, "...sufficient motivation can compensate for a patient's inability to be hypnotized" (Spiegel, 1970, p.238). In another study, Mott (1979) found that 100% of high, 44% of medium, and 17% of low hypnotizable subjects had quit smoking, although those numbers were to drop to 20%, 22% and 0% on long term (not defined) follow-up. DePiano, Cash and Sandford (1982) had 55% of their highly hypnotizable group quit compared to only 26% in their low group at post-treatment. At the 4 month follow-up 41% and 5% respectively were still abstinent. Three other studies (Basker, 1985; Barabasz, Baer, Sheehan & Barabasz, 1986; Baer, Carey & Meminger, 1986) also indicated that highly hypnotizable subjects had higher abstinent rates than their medium or low counterparts (Holroyd, 1991).

There are also a number of studies (Phelps, 1986b; Perry & Mullen, 1975; Stanton, 1985; Powell, 1980; Sheehan & Surman, 1982;

Perry et al., 1979) that found no association between hypnotic susceptibility and treatment outcome (Holroyd, 1991). In addition three recent studies at Carleton University (Spanos et al., 1992) also fall into this category. With respect to all the studies indicating negative findings between hypnotizability and outcome, Holroyd (1991) argues that, "One cannot assume that negative findings countervail the positive ones because in this case positive replication contributes to validity generalization, while negative findings may be attributed to research and design." (p.94-95). Examples of such design flaws described by Holroyd (1991) are: very low abstinence rates (making it difficult to establish a relationship due to restricted range); non-traditional measures of hypnotizability; insufficient number of subjects which increased the the odds of a Type II inferential error (Holroyd, 1991).

Unfortunately for Holroyd's (1991) argument some of the studies that obtained nonsignificant correlations between smoking reduction and hypnotizability employed both adequate sample sizes and standardized and reliable indexes of hypnotizability. Holroyd's argument that low abstinence rates constitutes a "design flaw" is odd. If, in fact hypnotizability was strongly related to treatment outcome and sample sizes were of sufficient magnitude to include some highly hypnotizable subjects, then there should be substantial variation in abstinence rates.

In clinical applications of hypnosis, for problems other than tobacco addiction, there is evidence to support both sides of this argument. There are studies that document a relationship between

hypnotizability and clinical outcome for chronic pain (Chaves, 1989). Conversely, there are a number of experiments that fail to show any relationship between hypnotizability and outcome when using hypnotic interventions in areas such as dental pain, warts, and control of hemophilic bleeding (Spanos & Chaves, 1989).

The Present Experiment

The present experiment was developed with several purposes in mind. To begin with since earlier studies at Carleton (Spanos et al., 1992) which employed the Spiegel procedure were largely ineffective it was decided to create a composite treatment package; combining the Spiegel method with the procedures of Hall and Crasilneck (1970), Stanton (1978) and Watkins (1976). Employing a combined treatment package (containing a wide range of procedures instead of just one) offered subjects a range of strategies to fit with their personal preferences and skills. The present study also sought to compare the effectiveness of the same smoking strategies with and without a prior hypnotic induction procedure.

The rationale for the inclusion of a placebo control condition in this study was based on the research of Wagstaff (1987) and Kirsch (1985). The latter authors have suggested that in clinical settings hypnotic procedures are effective to the extent that they enhance subjects' expectations. In fact Kirsch (1985) has argued that the content of the therapeutic suggestions is irrelevant so long as the suggestions enhance a client's expectation of therapeutic change.

Therefore, in order to examine these ideas hypnotic and non-hypnotic suggested strategies were compared against a placebo control condition designed to enhance expectations of therapeutic success in the absence of specific strategies.

A major limitation of many studies in the hypnotic literature is a lack of a no treatment control condition. In order to avoid this problem the present study included a control condition where subjects monitored their smoking in the absence of treatments of any kind.

This study also examined the relationship between hypnotizability and smoking reduction when hypnotizability was assessed at the end of the treatment rather than the beginning this was done to prevent subjects' awareness of their hypnotizability from creating expectations concerning therapeutic outcome.

Finally the present study included several questionnaire variables to examine the role of subjects' motivations on quitting haviour. A modified version of the Perry et al. (1979) questionnaire was included to determine if motivational variables correlated with smoking reduction. Along these lines a questionnaire developed by Curry et al. (1990) which measures intrinsic/extrinsic motivational factors was also included. Curry et al. (1990) found that smokers with higher levels of intrinsic relative to extrinsic motivation were more likely to achieve abstinence from smoking.

Finally, the Crowne-Marlowe social desirability scale was included to assess the role compiiance in reports of smoking cessation.

Methodology

Subjects

Subjects were recruited from the general population through newspaper advertisements offering a free two session smoking cessation program. No deposit was required. A total of 54 subjects, 25 males and 29 females, ages 19-62 (mean age in years 29.9) were randomly assigned to one of the four treatment conditions.

Treatment Conditions.

(1) Hypnotic treatment. Subjects in this group received a combination of various existing treatments over two sessions. The first session began with a standardized ten minute hypnotic induction procedure modified from Barber (1969). After the induction subjects received a modified version of the Spiegel (1970) message, followed by suggestions from Crasilneck & Hall (1970), ego-strengthening suggestions modified from Hartland (1971) and finally the session terminated with a review of the Spiegel (1970) suggestions. The second session began with a short review of the Spiegel (1970) message's main points followed by the hypnotic induction. Subjects were then exposed to suggestions taken from Watkins (1976) and then ended with a modified version of the

Stanton (1978) treatment. For a full version of the treatment see Appendix B

(2) **Non-hypnotic treatment.** Subjects in this group received the same combination of treatments given to the hypnotic group. However, for these subjects there was no reference to hypnotic techniques and no hypnotic induction. This treatment condition was labelled "cognitive restructuring" to ensure that it was not seen as related to hypnotic methods. For a complete version of this treatment see Appendix C.

(3) **Subliminal message placebo treatment.** Subjects in this condition were informed that their treatment will require them to listen to music embedded with subliminal messages designed to help them quit smoking. There were in fact no embedded messages. The music used was a 'new age' orchestral arrangement entitled 'Northern Lights' by Scott Fitzgerald. This type of treatment was labelled for subjects as "subconscious reconditioning". Subjects received this treatment in two sessions, no more than a week apart.

(4) **Control condition.** Subjects in this group were told simply to monitor their smoking for a period of three months. At the end of this time span (which was the length of the follow-up period) they then received the treatment of their choice

Measures

Smoker's History and Motivation Questionnaire

(Appendix E): This questionnaire is a modified version of the one developed by Perry et al. (1979). It assessed attitudinal factors such

as desire to quit or reduce smoking, strength of smoking desire, and estimates of confidence of success as indicators of motivation. Perry et al. (1979) ascertained that desire to quit was the best predictor of treatment success.

Reasons for Quitting Questionnaire (Appendix F): This scale was developed by Curry et al. (1990) in order to measure whether intrinsic or extrinsic motivational factors are more related to quitting in smokers. Based on their research on the psychosocial determinants of smoking cessation Curry et al. (1990) created this 20 item scale based on the following four motivational dimensions; health concerns, self-control, immediate reinforcement, and social influence. Each of the five items for each dimension is rated on a 5-point scale ranging from 0 "not at all true" to 4 "extremely true".

Carleton University Responsiveness to Suggestion Scale (Appendix G): The Carleton University Responsiveness to Suggestion Scale (CURSS) (Spanos et al., 1981) measures responsiveness to hypnotic test suggestion. The CURSS yields three suggestibility scores for each subject. The CURSS:O score is an objective measure that reflects the number of suggestions to which the subject made the correct overt response (i.e., number passed). CURSS:O scores range from 0 (no suggestions passed) to 7 (all suggestions passed). The CURSS:S is a subjective measure which reflects the degree to which the events called for by each suggestion were subjectively experienced. Subjects rate items on 7 subscales (ranging from 0-3). For example subjects are asked to rate degree of arm stiffness during the suggestion for arm catalepsy. The CURSS:S

score ranges from 0 (no subjective effect rated to any suggestion) to 21 (strong subjective effect rated for the suggestions). The final measure, the CURSS:OI reflects the number of objectively passed suggested responses rated as "feeling involuntary" at least to a moderate degree. The CURSS:OI score ranges from 0 (no objectively passed responses rated as involuntary) to 7 (all suggestions objectively passed and rated at least moderately involuntary) (Spanos et al., 1983).

Crowne-Marlowe Social Desirability Scale

(Appendix H): This scale was developed by Crowne & Marlowe (1964). This scale, measures social desirability by having subjects answer true or false to 33 questions pertaining to social situations.

Procedure

Subjects were randomly assigned to one of the four treatment conditions. After initial contact was made, subjects were telephoned and the study explained to them. At this time all subjects were informed that a placebo condition was being being employed, and that some subjects could be assigned to that placebo condition. Subjects were also informed that at the end of the study those who were in the placebo condition would be offered another treatment if they so desired. Those who agreed to participate were scheduled for their first treatment session. They also had sent to them by mail a package containing: information pertaining to the purpose and location of the experiment; a set of questionnaires; and a calendar so that they could begin monitoring their smoking level. Each subject

(except those in the control group) was required to come in twice to the research laboratory. Every subject was also seen and given their respective treatment individually by the experimenter. The latter was a graduate student who wore a labcoat and tie in order to lend an air of professionalism to the proceedings. During the first session subjects in the three treatment conditions first, handed in their completed questionnaires. Subjects then received their respective treatment. Subjects in the hypnotic and non-hypnotic conditions were administered the treatment verbally by the experimenter. Subjects in the subliminal placebo message group received their treatment by audiotape, after a short introduction by the experimenter (Appendix C). After their treatment subjects were given two items to take home; an audiocassette containing a shortened version (15 minute) of the treatment; and a calendar to monitor their smoking activity. Finally before leaving the second session was scheduled.

When subjects in the hypnotic and non-hypnotic conditions returned for the second session they received the second part of their treatment, the CURSS and then were debriefed. Those subjects in the subliminal message placebo condition received the same treatment as in the first session, the CURSS, then debriefed. Before leaving subjects were asked to monitor their smoking behaviour themselves so that they would have a good awareness of their progress when contacted by the experimenter for the follow-up. During the three month follow-up period subjects in each group were contacted at intervals of two weeks, one, two and three months, in

order to monitor their smoking behaviour and answer any questions. At each follow-up subjects were asked how much they were smoking on the day of contact and during the previous two days. A daily score was calculated from an average of those three days. Control subjects were only required to come into the research laboratory at the end of the follow-up period, for their choice of treatment.

The number of cigarettes smoked per day was used in all the analyses related to smoking reduction. The baseline score was determined by taking the subjects reported number of cigarettes smoked in the week before the first treatment and dividing by seven. Subjects who dropped out before the second treatment were considered failures (dropouts) and assigned their baseline number for the follow-ups.

RESULTS

Dependent Measures of Smoking Reduction

Number of cigarettes smoked per day at baseline and at each follow-up. The first analysis of achievement in smoking reduction was done using the baseline number of cigarettes smoked per day and the number of cigarettes smoked at each of the follow-ups (4). A 4X5 (treatment X trials) mixed analysis of variance (Table 1) conducted on the four treatment conditions produced a significant effect only for trials ($F(4, 200)=8.02, p=.000$). Newman-Keuls post hoc analyses indicated that there were significantly more cigarettes smoked at baseline than at the second and third follow-ups, but there was no significant difference between those two trials. Subjects were also smoking significantly less at the second and third follow-up compared to the fourth and fifth follow-up. There was no significant difference between the fourth and fifth follow-up. Finally, there was no difference between baseline and the fourth and fifth follow-ups (see Figures 1 and 2 and Table 5).

Abstentions Very few subjects reported abstinence at any of the four follow-ups. Total abstinence was observed only during the first follow-up (2 weeks post-treatment) by only 3 subjects; one in the hypnotic and two in the non-hypnotic conditions. Chi-Square analysis showed no significant difference between those two groups.

The remaining follow-ups (1 month to three months) indicate a abstinence rate of zero for all conditions.

Fifty percent reduction. Further Chi Square analyses were conducted on those subjects who reduced their cigarette consumption by a minimum of fifty percent at each follow-up. Once again there were no significant differences between the three treatment conditions and the control group. At the fourth and final follow-up there was only one subject (in the hypnotic group) who met this criterion (Table 2).

Twenty-five percent reduction. Chi square analyses were conducted on subjects in the three treatment conditions and the control group, who reduced their cigarette consumption by a minimum of twenty-five percent. There were no significant differences at any of the follow-ups between these four groups (Table 3).

Dropouts. See Appendix D for all analyses pertaining to smoking reduction in dropouts.

Correlations Between Predictor Variables and Smoking Reduction. Correlations were calculated between the difference in the number of cigarettes smoked at each follow-up from baseline and each predictor variable for subjects in each of the treatment conditions separately, and also with the hypnotic and non-hypnotic groups combined and c) with all three treatment groups combined (Table 4).

There were no significant differences found between smoking reduction in any combination of groups at any follow-up interval and any of the CURSS or motivational predictor variables.

Table 1. Anova summary table.

Source of variation	DF.	Sum of Squares	Mean Square	F	Significance of F
Group	3	1301.36	433.79	.79	.506
Subjects	50	27488.45	549.77		
Trials	4	473.64	118.41	8.02	.000
Group X Trials	12	287.44	23.95	1.62	.088
Residual	200	2952.86	14.76		

Table 2 Number of subjects in each condition who decreased their cigarette consumption by at least 50 percent.

	Hypnotic	Non-Hypnotic	Subliminal	Control	χ^2 df=3
Follow-up #1:					
50% decrease	4	3	1	0	5.32
< 50%	10	11	13	12	p=.15
Follow-up #2:					
50% decrease	2	3	1	0	3.4
< 50%	12	11	13	12	p=.34
Follow-up #3:					
50% decrease	1	1	0	0	1.9
< 50%	13	13	14	12	p=.59
Follow-up #4					
50% decrease	1	0	0	0	2.9
< 50%	13	14	14	12	p=.41

no results significant at $\alpha=.05$

Table 3 Number of subjects in each condition who decreased their cigarette consumption by at least 25 percent.

	Hypnotic	Non-Hypnotic	Subliminal	Control	X ² df=3
Follow-up #1:					
25% decrease	6	4	1	2	5.41
< 25%	8	10	13	10	p=.14
Follow-up #2:					
25% decrease	5	5	1	2	4.6
< 25%	9	9	13	10	p=.20
Follow-up #3:					
25% decrease	2	1	0	0	3.6
< 25%	12	13	14	12	p=.30
Follow-up #4					
25% decrease	2	0	0	0	5.9
< 25%	12	14	14	12	p=.11

no results significant at $\alpha=.05$

Table 4 Correlations between treatment conditions and hypnotizability and other questionnaire variables at the final follow-up.

	Hypnotic	Non-Hypnotic	Subliminal	Hypnotic+ Non-Hyp	Hyp+ Non Hypnotic+ Sublim
CURSS:O	.09	.00	.00	.15	.14
CURSS:S	.16	.00	.00	.19	.18
CURSS:OI	.39	.00	.00	.34	.30
Need for cigarettes	.30	.00	.00	.23	.19
Desire to quit (motivation)	.09	.00	.00	.04	.02
Reasons for smoking	.47	.00	.00	.26	.24
Crowne- Marlowe.	.27	.00	.00	.18	.12
Intrinsic (Health)	.31	.00	.00	.25	.19
Extrinsic (pressure)	-.07	.00	.00	-.04	-.06

Table 5. Treatment means for each group at baseline and follow-ups. Number of cigarettes smoked per day.

	<u>Mean</u>	<u>Std. Deviation</u>
<u>Baseline:</u>		
Hypnotic	23.7	14.3
Non-hypnotic	17.4	8.7
Subliminal	21.6	9.4
Control	19.1	10.3
Total	20.5	10.9
<u>First Follow-Up:</u> (2 weeks post-treatment):		
Hypnotic	16.1	14.1
Non-hypnotic	14.0	11.0
Subliminal	20.8	10.7
Control	17.8	9.5
Total	17.2	11.5
<u>Second Follow-Up:</u> (1 month)		
Hypnotic	18.7	13.0
Non-hypnotic	13.2	10.1
Subliminal	20.9	10.5
Control	18.7	10.6
Total	17.8	11.2

	<u>Mean</u>	<u>Std. Deviation</u>
<u>Third Follow-Up:</u> (2 months)		
Hypnotic	22.1	13.6
Non-hypnotic	16.6	9.3
Subliminal	21.6	9.4
Control	19.5	10.7
Total	19.9	10.8
 <u>Fourth Follow-Up:</u> (3 months)		
Hypnotic	22.1	13.6
Non-hypnotic	17.4	8.7
Subliminal	21.6	9.4
Control	19.1	10.3
Total	20.1	10.6

Figure 1. Mean number of cigarettes smoked per day at baseline for all treatment conditions.

Figure 2. Mean number of cigarettes smoked per day for treatment conditions across follow-ups.

DISCUSSION

This smoking cessation experiment was the fourth of its kind conducted here at Carleton University. The abstinence rate of zero percent for the present study is also the lowest of the four studies. The three previous experiments reported abstinence rates of 5.95, 5, and 3.8 percent respectively (Spanos et al., 1992). All of the four Carleton studies used the Spiegel (1970) message, although the present study was the only one to combine it with other treatments. The zero percent abstinence rate for this study is much lower than in other experiments that employed the Spiegel (1970) message either by itself (e.g., Spiegel, 1970; 20% abstinence; Perry et al., 1979; 4 percent abstinence) or in combination with other treatments (e.g., Frank et al., 1986; 20% abstinence; Williams & Hall, 1988; 45% abstinence).

The present study also included in its treatment package elements from the smoking cessation methods of several other researchers; Hall & Crasilneck (1970, 1985); Stanton (1978); and Watkins (1976). The abstinence rates for those methods are 81% (thirty year average), 45% at six months and 67% at six months respectively.

Results from the present study failed to support the hypothesis that hypnotic techniques are superior to other smoking cessation techniques. The presence or absence of a hypnotic induction had no effect on any of the outcome measures of abstinence, or reduction.

Subjects in the hypnotic condition reduced smoking to the same degree as those in the non-hypnotic and the subliminal/placebo groups. Hyman et al. (1986) also found no differences in abstinence rates between the hypnotic and attention-placebo conditions. In the Hyman et al. (1986) study, however, both groups achieved abstinence rates of 40% at the six month follow-up. The present findings are consistent with those of Spanos et al., (1992) who found low abstinence rates as well as no significant differences between hypnotic and non-hypnotic treatments in three separate experiments. Other findings in the clinical literature also support the claim that the use of suggestions preceded by hypnotic induction are no more effective than suggestions used alone. For a review of the effectiveness of hypnotic methods compared to non-hypnotic interventions in the clinical literature the reader is referred to Spanos & Chaves (1989).

There are several possible explanations for the small treatment effects that were obtained in this study. The first explanation pertains to the type of subject sample used in this study. Unlike most other smoking experiments the present study used a nonclinical sample, where subjects received their treatment free of charge. Therefore, our subjects may have been less motivated in their attempts at quitting smoking than subjects in other studies who were willing and motivated to pay for their treatment. Another possible factor is the actual composition of the treatment itself. Subjects in this study were presented with a treatment package that contained a combination of several different treatments, given over two sessions.

Instead of benefiting from this fusion of various treatment components subjects may not have had enough time to attend to and rehearse any one specific method.

Hypnotic susceptibility, as measured by the CURSS in the present study, was unrelated to treatment outcome. This result is consistent with other reports in the smoking cessation literature (e.g., Perry et al., 1979; Stanton, 1985) and with the results of the three previous studies (Spanos et al., 1992) done at Carleton. Although there are some studies that have demonstrated a relationship between hypnotizability and treatment outcome (e.g., Mott, 1979; DePiano, Cash and Sandford, 1982), the variables that mediate the relationship between these variables have yet to be determined.

The zero percent abstinence rate of the subliminal/placebo condition in the present study is consistent with results from two other studies that also utilized a placebo condition (Barkley et al., 1977; MacHovec & Man, 1978). However, the subliminal/placebo condition was remarkably less effective than placebo conditions used by Hyman et al. (1986) which achieved a 40 percent abstinence rate. The large difference between the present study and Hyman et al. (1986) could be due to the nature of our placebo condition. In the present study subjects were simply told to listen to a tape that would enable them to quit smoking. In the Hyman et al. study subjects were instructed to quit "cold turkey". These two placebo groups are quite different. The subliminal condition of the present study was a more passive intervention than the one used by Hyman et al. (1986). The subjects in the present study might have simply waited for the

nonexistent subliminal messages to rid them of their smoking habit, whereas the subjects in the Hyman study had to rely on their own resources to quit.

It was hypothesized at the outset of this project that the hypnotic and non-hypnotic interventions would result in greater smoking reduction than the subliminal/placebo and the control conditions. The rationale behind this hypothesis was that the combination of various treatments given over to sessions would be more effective than simply listening passively to nonexistent subliminal messages or being in a waiting-list control group. It was also anticipated that combining the Spiegel (1970) message with other treatments would result in a greater abstinence and reduction rates than was obtained in the other three Carleton experiments that used only the modified Spiegel message (Spanos et al., 1992). These hypotheses were not confirmed. Overall the results would appear to indicate that in this case active treatments failed to produce any significant smoking reduction.

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APPENDIX A

Hypnotic Treatment Condition

Session One

Hypnotic Induction

Make yourself comfortable in the chair and close your eyes. Now relax and listen to my voice. Your legs feel heavy and limp, heavy and limp. You are heavy, heavy, heavy as lead. Your whole body feels heavy, heavier and heavier. You feel drowsy, drowsy and sleepy, drowsy, drowsy and sleepy. Your breathing is slow, slow and regular, slow and regular.

You feel pleasantly drowsy and sleepy as you listen to my voice. You are going to get more and more drowsy, sleepy, sleepy. Soon you will be deeply asleep but you will have no trouble hearing my voice. You will not wake up until I tell you to. In a moment I will begin to count from 1 to 10. At each count you will feel yourself going down, down into a deep comfortable, a deep restful sleep. A sleep in which you will find yourself responding to my suggestions.

One, you feel more relaxed, always more and more relaxed. Two...three, going deeper and deeper, always more and more relaxed and comfortable, sleepy and relaxed, always more and more relaxed, comfortable and relaxed. Four...five...six, deeper still. always deeper

and deeper, deeper and more deeply asleep. Seven...eight, always deeper and deeper, deeper and more deeply asleep. Nine...ten, deeply asleep, your whole body feels relaxed and comfortable, relaxed and comfortable, relaxed and asleep in which you will find yourself responding to my voice, responding to my suggestions.

You are feeling comfortable and relaxed, comfortable and relaxed, you are in a deep sound sleep...a deep sound sleep...fully prepared to respond to and experience what I suggest. Fully prepared to respond to the suggestions I will now give you.

Deepening Instructions: Now you are completely relaxed...totally comfortable...completely relaxed and comfortable...you are drifting deeper and deeper...you are drifting into a state of meditation. In this state of meditation your mind will focus on three critical points. As you meditate on these three critical points you will continue to feel completely relaxed and comfortable.

Part A)

Modified Spiegel (1970) Hypnotic Suggestions:

The first point is: For your body smoking is a poison. Focus on this thought... You are composed of a number of components, the most important of which is your body. Smoking is not so much a poison for you as it is for your body specifically. Reflect on this thought...

The second point is: You cannot live without your body. Focus on this thought. Your body is a precious physical plant through which you experience life.

The third point is: To the extent that you want to live, you owe your body this respect and protection. This is your way of acknowledging the fragile precious nature of your body, and, at the same time, your way of seeing yourself as your body's keeper. When you make this commitment to respect your body, you have within you the power to have smoked your last cigarette. Concentrate on this thought.

Notice how this strategy puts the emphasis on what you are for, rather than what you are against. It is true that smoking is a poison and you are against it, but the emphasis is upon the commitment to respect your body. As a consequence of your commitment, it becomes natural for you to protect your body against the poison of further smoking.

Now I suggest that in the beginning you do these exercises as often as ten different times a day, preferably every 1 to 2 hours. At first the exercise takes about a minute, but as you become more expert, you can do it in much less time.

The exercise is as follows, now focus intently on the instructions. You sit down, and to yourself, you count to three. At one, you close your eyes; at two you take a deep breath; at three, you exhale slowly, relax your body and enter a state of meditation.

In this state of meditation you concentrate on these three critical points.

One: For your body, not for you, for your body smoking is a poison.

Two: You need your body to live.

Three: You owe your body this respect and protection.

Allow yourself time to reflect on the implications of these three points and then bring yourself out of this state of concentration called self-hypnosis by counting to three. At the count of three you will be fully aware of your surroundings. You will have assumed your normal waking state of awareness.

By doing the exercise ten different times each day, you can enter this state of deep concentration. Give yourself this island of time. Twenty seconds, ten times a day, in which you use this state of extra receptivity to re-imprint these critical points. For your body, smoking is a poison. You need your body to live. You owe your body this respect and protection. Reflect upon it, then get on with what you ordinarily do.

Using this exercise means looking at your yourself in a double sense; you on the one hand, your body on the other. You are your body's keeper. Your body is your physical plant. There is something helpless about your body. When you put poison into your body, it can do nothing but accept it and make the best of it. When you realize that you are the one putting the poison there, you have some questions to ask. Are you for your body or are you not? If the answer is no, then keep on smoking. But if the answer is yes, you have a built-in obligation to give your body the respect and protection it deserves.

When an urge to smoke occurs, admit it, but, at the same time, acknowledge that you have this commitment to respect your body.

Thus, you have two urges at the same time: the urge to smoke and the urge to protect your body. Lock them together. By emphasizing respect for your body, you simultaneously ignore the urge to smoke. If you lock together two contradictory urges and focus on one, you must, at the same time, ignore the other.

Part B)**Crasilneck & Hall (1970)**

Hypnosis allows contact with your conscious as well as your unconscious mind. This contact allows you gain more control over the physical state of your body. Before we go any further, let's test this control.

Now I want you to think of the back of your right hand as numb, dull and insensitive. Think of the back of your right hand as becoming more and more insensitive, more and more numb, dull and insensitive. Okay, now I am going to prick the back of your right hand with this nail file. Notice how dull the nail file feels when you concentrate on your hand being numb and insensitive.

Good. Now notice how that did not hurt how, by controlling your thoughts you were able to dull the sensation on the back of your hand. Okay. You can stop concentrating on your hand now, and let it's normal sensations return. Now I would like you to listen carefully to the following suggestions.

You will not crave excessively for a habit negatively affecting your health. Your mind can block the perception of discomfort, as when your hand felt insensitive to the prick of the sharp nail file. Your mind will function in such a manner that you will no longer crave for a habit that has negatively affected your life with every drag of cigarette smoke you have taken into your lungs. You will block the craving for tobacco, a habit that is causing your heart and

lungs to work much harder than necessary, forcing your your lungs to labor beyond all necessity, stressing and straining these vital organs, like a car constantly driven in low gear, constantly laboring uphill, stressing and straining the motor. But because of the great control of your unconscious mind, the craving for this vicious and lethal habit will grow steadily and markedly less until it rapidly reaches a permanent zero level. You simply will not crave for cigarettes again. You will be relaxed and at ease, pleased that you are giving up a habit which has such a negative effect upon you life and well-being. You are improving your life by giving up cigarettes and you will continue to do so. You will not smoke cigarettes again. You will not be hungry or eat excessively, your craving will reach a permanent zero level. Through the virtually omnipotent and godlike power of your unconscious mind, you can and you will be able to resist a craving that is harmful to your body. You will treat your body with kindness and consideration, your body that serves you so unselfishly. You will no longer consciously or unconsciously choose to impose this undeserved burden of smoking on your heart, your lungs, your circulation, and the vital organs of your body. You will treat your body with kindness, as if it were your closest friend. You will find that through the immense power of your unconscious mind you will be able to overcome this old, outgrown, outworn addiction, which we now know, statistically, robs you of 4 minutes of life with every cigarette you smoke. You will be able to give up this dirty and unhealthy habit. As you permit your body to rid itself of this undeserved burden of smoking, your lungs will again become

efficient, your red blood cells will carry more oxygen to your vital organs, you will feel more alert and alive, and you will have a justifiable sense of pride for having worked toward and accomplished this important, healthy, worthwhile goal. You are no longer a smoker, you are using your own free will, you are treating yourself in a healthy, proper manner. You will not be excessively nervous or tense. You will not gain excessive weight. You will exercise, you will walk a mile a day, if your physician approves. You will sleep well. Your craving for tobacco will be minimal and will rapidly decline to a zero level.

Part C)

Hartland's (1971) Modified Ego Strengthening Suggestions:

Now here are some more suggestions concerned with your well being. You will no longer think nearly so much about smoking...you will no longer dwell nearly so much upon smoking and your difficulties in quitting...and you will become much less conscious of yourself...much less pre-occupied with yourself...and with your feelings. Every day your nerves will become stronger and steadier...your mind calmer and clearer...more composed...more placid...more tranquil. You will become much less easily worried...much less easily agitated...much less easily fearful and apprehensive...much less easily upset. You will be able to think more clearly...you will be able to concentrate more easily. You will be able to give up your whole undivided attention to whatever you are

doing...to the complete exclusion of everything else. Consequently, your memory will rapidly improve...and you will be able to see things in their true perspective...without magnifying your difficulties...without ever allowing them to get out of proportion. Every day you will become...and you will remain...more and more completely relaxed...and less tense each day...both mentally and physically. And as you become...and as you remain...more relaxed...and less tense each day you will develop much more confidence in yourself...more confidence in your ability to do...not only what you have to do each day...but more confidence in your ability to do whatever you ought to be able to do...without fear of failure...without fear of consequences...without unnecessary anxiety...without uneasiness.

Because of this every day you will feel more and more independent...more able to stand upon your own feet, to hold your own, no matter how difficult or trying things may be. Every day you will feel a greater sense of personal well-being...A greater feeling of personal safety...and security...than you have felt in a long, long time. And because of these things will begin to happen...exactly as I tell you they will happen...more and more rapidly...powerfully...and completely...with every treatment I give you, you will feel much happier...much more contented...much more optimistic in every way. You will consequently become much more able to rely upon...to depend upon...yourself...your own efforts...your own

judgements...your own opinions. You will feel much less need to have to rely upon or to depend upon cigarettes.

Part D)

Modified Spiegel (1970) Hypnotic Suggestions:

Before ending for today, I would like to go back to the meditation exercise, that I would like you to practice at home.

One, your eyes are closed. Two, take a deep breath. Three let your breath out. You are now relaxed and in a state of meditation. Repeat to yourself the three points. Repeat each point after me. For my body smoking is a poison... I need my body to live... I owe my body this respect and protection... Focus on the implications of these three points. Now bring yourself out of this state of concentration called self-hypnosis by counting to three. Do it now, one...two...three... Your eyes are open, and you are fully aware of your surroundings. You are in your normal waking state of awareness.

Now you do not need privacy to do a reinforcement exercise. You can do it wherever you happen to be. Just find somewhere to sit down. If it makes you feel more comfortable bring your hand up to your forehead in a position of concentration. Then go through the exercise. One, close your eyes; two, take a deep breath; three, exhale slowly, relax and repeat to yourself. For my body, smoking is a poison. I need my body to live. I owe my body this respect and protection. Once you have mastered it the exercise takes about

twenty seconds. An observer would assume that you are concentrating on something, and that is exactly what you are doing. Self-hypnosis is disciplined concentration.

So far, we have discussed the exercise as a basic body defense system. Doing the exercise every one to two hours is like programming a computer. By imprinting this program on your brain, you have a private computer which sets your primary policy.

Finally, there is a second defense. Suppose you find your hand reaching for a cigarette, or you find yourself thinking about smoking. Instead of fighting it, do this immediately. Take a deep breath and let it out slowly. This will reactivate the last time you did the exercise. It reactivates the third point, which is: I owe my body this respect and protection. By emphasizing this new respect for your body, this urge to respect your body, the urge to smoke will be cancelled out. The reason for doing the exercise every 1 to 2 hours is that you always have a recent exercise to which you can refer.

Session Two

Part A)

Spiegel (1970) exercise review:

Before starting today, I would like to review the meditation exercise, that I wanted you to practice at home.

One, your eyes are closed. Two, take a deep breath. Three let your breath out. You are now relaxed and in a state of meditation. Repeat to yourself the three points. Repeat each point after me. For my body smoking is a poison... I need my body to live... I owe my body this respect and protection... Focus on the implications of these three points. Now bring yourself out of this state of concentration called self-hypnosis by counting to three. Do it now, one... two... three... Your eyes are open, and you are fully aware of your surroundings. You are in your normal waking state of awareness.

Now we will begin today's treatment (administer hypnotic induction). Now that you are hypnotized, let me give you some more suggestions to help you quit and feel better about yourself.

Part B)**Watkins' (1976) Suggestions:**

Cost imagery: Cigarettes cost ___\$ a pack. You tell me that you smoke up to ___ pack(s) a day. That means that you pay at least ___\$ a day for cigarettes. Multiply ___\$ by seven and the result is ___\$ a week. If you multiply ___\$ by the number of weeks in a year (52), then the total amount you are paying for cigarettes in a year is ____\$, and for what? For a habit that makes you miserable. Wouldn't you like to use that money for something else, for something that would make you happy instead of miserable? If you stop smoking you deserve to spend the money you save by buying something that won't go up in smoke. Think now what you would like to buy with the ___\$, you would save in a year's time, something perhaps that you have always wanted but felt it was too much of a luxury. In your imagination right now buy that item, and experience using it. Feel the pleasure you derive from it. Experience this pleasure while I am silent for a minute.

Victory suggestions: You tell me you want to feel a sense of victory over your smoking habit, a sense of will-power and self-control, a feeling of winning over this vice. You can have this feeling by doing the following: every time you pick up a pack of cigarettes and then put that pack down again, this feeling of victory will come over you. You will feel good and strong. It's like winning one battle

after another. Each time you repeat this behavior of saying no to a cigarette, either in fantasy or reality, you will be winning one battle after the other until the final victory, the victory over your smoking habit.

Day-of-not-smoking imagery: Imagine that the day has come that you no longer smoke. You are walking across campus to this building. The air is fresh; the sun is shining; and it's a beautiful day. You woke up this morning feeling good about yourself and your world. You like the way you're handling your life. For one thing, the feeling of being a slave to a cigarette no longer haunts you. YOU are in control, not the cigarette. You have more energy; your throat is clear; and you know your lungs are clearing. You feel great, and the more you think about how good you feel, the more energetic your step becomes. Continue walking across campus now while I am silent for a minute.

Part C)

Stanton's (1978) Suggestions:

You are confident, completely confident, that you are going to overcome the cigarette smoking habit. You will be able to let go of the habit so easily...You will wonder why you ever bothered to smoke...You won't miss smoking at all...From this moment on, whenever you think of having a cigarette, if you automatically reach for one, if someone offers you one, you will say 'NO'...A voice will

echo through your mind " NO! NO! NO!" ...Smoking is a foolish stupid habit...it hurts me physically...it damages my health...I am not going to smoke again. You will completely overcome the cigarette smoking habit...You will find you are able to do this...Know in your mind, now, that you will be able to do this...It is easy and you can do it...Your mind can and should control your body... When you stop smoking , and you can do so from this moment, you will feel physically better, healthier, your breathing easier, your senses sharper...and you will also feel mentally better, pleased that you have been able to control your body...happy that you are in control...happy that you are strong enough to stop smoking so easily...You do it, not me...It is your triumph...your victory. When you see others smoking around you, you will feel delighted that you don't smoke...You'll say to yourself," I'll never smoke again...the sight and smell of cigarettes is unpleasant...I haven't any desire to smoke at all...I have no need to smoke...it doesn't help me in any way and I feel so much better when I don't smoke."

Make your decision now...You will completely overcome the cigarette-smoking habit and stop smoking now...and you will never smoke again...It is easy and you can do it...You will feel no sense of loss or unhappiness...instead you will feel good, happy, proud of yourself...Once you make this decision to stop smoking, no force will be able to change this decision...You will be completely confident and you will stop smoking permanently.

You don't need to smoke cigarettes...From now on, if you think about smoking, and this will happen very infrequently, you will

immediately take a deep breath, let go and relax, and you will realize in your mind that you don't need to smoke...You are in complete control and your decision to stop smoking cannot be reversed.

Red balloon visualization

Now, I would like you to imagine that you are standing outside in a field on a beautiful summer day. You are basking in the sunshine and your body is being caressed by a warm summer breeze. You feel totally relaxed and at peace, relaxed and peaceful. As you stand there experiencing those feelings of relaxation and peace, you notice that near your feet is a wicker basket. Now imagine that you have a pack of the brand of cigarettes that you used to smoke, and that one at a time you throw all the cigarettes into the basket. One...two..three, one after the other until the pack is empty. Imagine that as you throw away your cigarettes ,you are also discarding your needs and desires. Imagine all your needs and desires concerning your smoking habit being discarded into the basket with each cigarette. All your needs, and desires, imagine them being simply thrown away.

Now notice that once you have rid yourself of all your needs and desires, you feel wonderful. You feel happy and joyous, happy and joyous that you are free from your needs and desires.

Now close the container. Imagine yourself attaching a bright red balloon to this container. Now imagine yourself watching this bright red balloon start lifting this container into the air. Up, up it goes, and with it go all your needs and desires. Imagine yourself

watching this bright balloon take the basket farther and farther away. Watch, as the container with all your needs and desires floats away into the clear blue sky. Farther and farther away until it is but a dot against the beautiful blue sky. Imagine yourself watching the basket, and along with it all your needs and desires, finally vanish into the blue.

APPENDIX B

Non-Hypnotic Treatment Condition

Session One

Part A)

Modified Spiegel (1970) Suggestions:

The first point is: For your body smoking is a poison. Focus on this thought... You are composed of a number of components, the most important of which is your body. Smoking is not so much a poison for you as it is for your body specifically. Reflect on this thought...

The second point is: You cannot live without your body. Focus on this thought. Your body is a precious physical plant through which you experience life.

The third point is: To the extent that you want to live, you owe your body this respect and protection. This is your way of acknowledging the fragile precious nature of your body, and, at the same time, your way of seeing yourself as your body's keeper. When you make this commitment to respect your body, you have within you the power to have smoked your last cigarette. Concentrate on this thought.

Notice how this strategy puts the emphasis on what you are for, rather than what you are against. It is true that smoking is a poison and you are against it, but the emphasis is upon the commitment to respect your body. As a consequence of your commitment, it becomes natural for you to protect your body against the poison of further smoking.

Now I suggest that in the beginning you do these exercises as often as ten different times a day, preferably every 1 to 2 hours. At first the exercise takes about a minute, but as you become more expert, you can do it in much less time.

The exercise is as follows, now focus intently on the instructions. You sit down, and to yourself, you count to three. At one, you close your eyes; at two you take a deep breath; at three, you exhale slowly, relax your body and enter a state of meditation.

In this state of meditation you concentrate on these three critical points.

One: For your body, not for you, for your body smoking is a poison.

Two: You need your body to live.

Three: You owe your body this respect and protection.

Allow yourself time to reflect on the implications of these three points and then bring yourself out of this state of concentration by counting to three. At the count of three you will be fully aware of your surroundings. You will have assumed your normal waking state of awareness.

By doing the exercise ten different times each day, you can enter this state of deep concentration. Give yourself this island of time. Twenty seconds, ten times a day, in which you use this state of extra receptivity to re-imprint these critical points. For your body, smoking is a poison. You need your body to live. You owe your body this respect and protection. Reflect upon it, then get on with what you ordinarily do.

Using this exercise means looking at your yourself in a double sense; you on the one hand, your body on the other. You are your body's keeper. Your body is your physical plant. There is something helpless about your body. When you put poison into your body, it can do nothing but accept it and make the best of it. When you realize that you are the one putting the poison there, you have some questions to ask. Are you for your body or are you not? If the answer is no, then keep on smoking. But if the answer is yes, you have a built-in obligation to give your body the respect and protection it deserves.

When an urge to smoke occurs, admit it, but, at the same time, acknowledge that you have this commitment to respect your body. Thus, you have two urges at the same time: the urge to smoke and the urge to protect your body. **Lock them together.** By emphasizing respect for your body, you simultaneously ignore the urge to smoke. If you lock together two contradictory urges and focus on one, you must, at the same time, ignore the other.

Part B)**Crasilneck & Hall (1970):**

Each of us has the ability through our cognitive powers to contact our conscious as well as our unconscious mind. This contact allows you gain more control over the physical state of your body. Before we go any further, let's test this control.

Now I want you to think of the back of your right hand as numb, dull and insensitive. Think of the back of your right hand as becoming more and more insensitive, more and more numb, dull and insensitive. Okay, now I am going to prick the back of your right hand with this nail file. Notice how dull the nail file feels when you concentrate on your hand being numb and insensitive.

Good. Now notice how that did not hurt how, by controlling your thoughts you were able to dull the sensation on the back of your hand. Okay. You can stop concentrating on your hand now, and let it's normal sensations return. Now I would like you to listen carefully to the following suggestions.

You will not crave excessively for a habit negatively affecting your health. Your mind can block the perception of discomfort, as when your hand felt insensitive to the prick of the sharp nail file. Your mind will function in such a manner that you will no longer crave for a habit that has negatively affected your life with every drag of cigarette smoke you have taken into your lungs. You will block the craving for tobacco, a habit that is causing your heart and lungs to work much harder than necessary, forcing your your lungs

to labor beyond all necessity, stressing and straining these vital organs, like a car constantly driven in low gear, constantly laboring uphill, stressing and straining the motor. But because of the great control of your unconscious mind, the craving for this vicious and lethal habit will grow steadily and markedly less until it rapidly reaches a permanent zero level. You simply will not crave for cigarettes again. You will be relaxed and at ease, pleased that you are giving up a habit which has such a negative effect upon your life and well-being. You are improving your life by giving up cigarettes and you will continue to do so. You will not smoke cigarettes again. You will not be hungry or eat excessively, your craving will reach a permanent zero level. Through the virtually omnipotent and godlike power of your unconscious mind, you can and you will be able to resist a craving that is harmful to your body. You will treat your body with kindness and consideration, your body that serves you so unselfishly. You will no longer consciously or unconsciously choose to impose this undeserved burden of smoking on your heart, your lungs, your circulation, and the vital organs of your body. You will treat your body with kindness, as if it were your closest friend. You will find that through the immense power of your unconscious mind you will be able to overcome this old, outgrown, outworn addiction, which we now know, statistically, robs you of 4 minutes of life with every cigarette you smoke. You will be able to give up this dirty and unhealthy habit. As you permit your body to rid itself of this undeserved burden of smoking, your lungs will again become efficient, your red blood cells will carry more oxygen to your vital

organs, you will feel more alert and alive, and you will have a justifiable sense of pride for having worked toward and accomplished this important, healthy, worthwhile goal. You are no longer a smoker, you are using your own free will, you are treating yourself in a healthy, proper manner. You will not be excessively nervous or tense. You will not gain excessive weight. You will exercise, you will walk a mile a day, if your physician approves. You will sleep well. Your craving for tobacco will be minimal and will rapidly decline to a zero level.

Part C)

Hartland's (1971) Modified Ego Strengthening Suggestions:

Now here are some more suggestions concerned with your well being. You will no longer think nearly so much about smoking...you will no longer dwell nearly so much upon smoking and your difficulties in quitting...and you will become much less conscious of yourself...much less pre-occupied with yourself...and with your feelings. Every day your nerves will become stronger and steadier...your mind calmer and clearer...more composed...more placid...more tranquil. You will become much less easily worried...much less easily agitated...much less easily fearful and apprehensive...much less easily upset. You will be able to think more clearly...you will be able to concentrate more easily. You will be able to give up your whole undivided attention to whatever you are doing...to the complete exclusion of everything else. Consequently, your memory will rapidly improve...and you will be able to see

things in their true perspective...without magnifying your difficulties...without ever allowing them to get out of proportion. Every day you will become...and you will remain...more and more completely relaxed...and less tense each day...both mentally and physically. And as you become...and as you remain...more relaxed...and less tense each day...so...you will develop much more confidence in yourself...more confidence in your ability to do...not only what you have to do each day...but more confidence in your ability to do whatever you ought to be able to do...without fear of failure...without fear of consequences...without unnecessary anxiety...without uneasiness.

Because of this every day you will feel more and more independent...more able to stand upon your own feet, to hold your own, no matter how difficult or trying things may be. Every day you will feel a greater sense of personal well-being...A greater feeling of personal safety...and security...than you have felt in a long, long time. And because of these things will begin to happen...exactly as I tell you they will happen...more and more rapidly...powerfully...and completely..with every treatment I give you...you will feel much happier...much more contented...much more optimistic in every way. You will consequently become much more able to rely upon...to depend upon...yourself...your own efforts...your own judgements...your own opinions. You will feel much less need to have to rely upon or to depend upon cigarettes.

Part D)**Modified Spiegel (1970) Suggestions:**

Before ending for today, I would like to go back to the meditation exercise, that I would like you to practice at home.

One, your eyes are closed. Two, take a deep breath. Three let your breath out. You are now relaxed and in a state of meditation. Repeat to yourself the three points. Repeat each point after me. For my body smoking is a poison... I need my body to live... I owe my body this respect and protection... Focus on the implications of these three points. Now bring yourself out of this state of concentration by counting to three. Do it now, one... two... three... Your eyes are open, and you are fully aware of your surroundings. You are in your normal waking state of awareness.

Now you do not need privacy to do a reinforcement exercise. You can do it wherever you happen to be. Just find somewhere to sit down. If it makes you feel more comfortable bring your hand up to your forehead in a position of concentration. Then go through the exercise. One, close your eyes; two, take a deep breath; three, exhale slowly, relax and repeat to yourself. For my body ,smoking is a poison. I need my body to live. I owe my body this respect and protection. Once you have mastered it the exercise takes about twenty seconds. An observer would assume that you are concentrating on something, and that is exactly what you are doing.

So far, we have discussed the exercise as a basic body defense system. Doing the exercise every one to two hours is like programming a computer. By imprinting this program on your brain, you have a private computer which sets your primary policy.

Finally, there is a second defense. Suppose you find your hand reaching for a cigarette, or you find yourself thinking about smoking. Instead of fighting it, do this immediately. Take a deep breath and let it out slowly. This will reactivate the last time you did the exercise. It reactivates the third point, which is: I owe my body this respect and protection. By emphasizing this new respect for your body, this urge to respect your body, the urge to smoke will be cancelled out. The reason for doing the exercise every 1 to 2 hours is that you always have a recent exercise to which you can refer.

Session Two

Part A)

Spiegel (1970) exercise review:

Before starting today, I would like to review the meditation exercise, that I wanted you to practice at home.

One, your eyes are closed. Two, take a deep breath. Three let your breath out. You are now relaxed and in a state of meditation. Repeat to yourself the three points. Repeat each point after me. For my body smoking is a poison... I need my body to live... I owe my body this respect and protection... Focus on the implications of these three points. Now bring yourself out of this state of concentration by counting to three. Do it now, one... two... three... Your eyes are open, and you are fully aware of your surroundings. You are in your normal waking state of awareness.

Now we will begin today's treatment. Here you some more suggestions to help you quit and feel better about yourself.

Part B)

Watkins' (1976) Suggestions:

Cost imagery: Cigarettes cost ___\$ a pack. You tell me that you smoke up to ___ pack(s) a day. That means that you pay at least ___\$ a day for cigarettes. Multiply ___\$ by seven and the result is

___\$ a week. If you multiply ___\$ by the number of weeks in a year (52), then the total amount you are paying for cigarettes in a year is ___\$, and for what? For a habit that makes you miserable.

Wouldn't you like to use that money for something else, for something that would make you happy instead of miserable? If you stop smoking you deserve to spend the money you save by buying something that won't go up in smoke. Think now what you would like to buy with the ___\$, you would save in a year's time, something perhaps that you have always wanted but felt it was too much of a luxury. In your imagination right now buy that item, and experience using it. Feel the pleasure you derive from it. Experience this pleasure while I am silent for a minute.

Victory suggestions: You tell me you want to feel a sense of victory over your smoking habit, a sense of will-power and self-control, a feeling of winning over this vice. You can have this feeling by doing the following: every time you pick up a pack of cigarettes and then put that pack down again, this feeling of victory will come over you. You will feel good and strong. It's like winning one battle after another. Each time you repeat this behavior of saying no to a cigarette, either in fantasy or reality, you will be winning one battle after the other until the final victory, the victory over your smoking habit.

Day-of-not-smoking imagery: Imagine that the day has come that you no longer smoke. You are walking across campus to

this building. The air is fresh; the sun is shining; and it's a beautiful day. You woke up this morning feeling good about yourself and your world. You like the way you're handling your life. For one thing, the feeling of being a slave to a cigarette no longer haunts you. YOU are in control, not the cigarette. You have more energy; your throat is clear; and you know your lungs are clearing. You feel great, and the more you think about how good you feel, the more energetic your step becomes. Continue walking across campus now while I am silent for a minute.

Part C)

Stanton's (1978) Suggestions:

You are confident, completely confident, that you are going to overcome the cigarette smoking habit... You will be able to let go of the habit so easily...You will wonder why you ever bothered to smoke...You won't miss smoking at all...From this moment on, whenever you think of having a cigarette, if you automatically reach for one, if someone offers you one, you will say 'NO'...A voice will echo through your mind " NO! NO! NO!" ...Smoking is a foolish stupid habit...it hurts me physically...it damages my health...I am not going to smoke again. You will completely overcome the cigarette smoking habit...You will find you are able to do this. Know in your mind, now, that you will be able to do this...It is easy and you can do it...Your mind can and should control your body... When you stop smoking , and you can do so from this moment, you will feel physically better, healthier, your breathing easier, your senses sharper...and you will

also feel mentally better, pleased that you have been able to control your body...happy that you are in control...happy that you are strong enough to stop smoking so easily...You do it, not me...It is your triumph...your victory. When you see others smoking around you, you will feel delighted that you don't smoke...You'll say to yourself, "I'll never smoke again...the sight and smell of cigarettes is unpleasant...I haven't any desire to smoke at all...I have no need to smoke...it doesn't help me in any way and I feel so much better when I don't smoke."

Make your decision now...You will completely overcome the cigarette-smoking habit and stop smoking now...and you will never smoke again...It is easy and you can do it...You will feel no sense of loss or unhappiness...instead you will feel good, happy, proud of yourself...Once you make this decision to stop smoking, no force will be able to change this decision...You will be completely confident and you will stop smoking permanently.

You don't need to smoke cigarettes...From now on, if you think about smoking, and this will happen very infrequently, you will immediately take a deep breath, let go and relax, and you will realize in your mind that you don't need to smoke. You are in complete control and your decision to stop smoking cannot be reversed.

Red balloon visualization

Now, I would like you to imagine that you are standing outside in a field on a beautiful summer day. You are basking in the sunshine and your body is being caressed by a warm summer

breeze. You feel totally relaxed and at peace, relaxed and peaceful. As you stand there experiencing those feelings of relaxation and peace, you notice that near your feet is a wicker basket. Now imagine that you have a pack of the brand of cigarettes that you used to smoke, and that one at a time you throw all the cigarettes into the basket. One...two...three, one after the other until the pack is empty. Imagine that as you throw away your cigarettes, you are also discarding your needs and desires. Imagine all your needs and desires concerning your smoking habit being discarded into the basket with each cigarette. All your needs, and desires, imagine them being simply thrown away.

Now notice that once you have rid yourself of all your needs and desires, you feel wonderful. You feel happy and joyous, happy and joyous that you are free from your needs and desires.

Now close the container. Imagine yourself attaching a bright red balloon to this container. Now imagine yourself watching this bright red balloon start lifting this container into the air. Up, up it goes, and with it go all your needs and desires. Imagine yourself watching this bright balloon take the basket farther and farther away. Watch, as the container with all your needs and desires floats away into the clear blue sky. Farther and farther away until it is but a dot against the beautiful blue sky. Imagine yourself watching the basket, and along with it all your needs and desires, finally vanish into the blue.

APPENDIX C

Subliminal Message Placebo Condition

You are about to learn a method that will help you quit smoking. This method is called "Subconscious reconditioning". This technique has been used by physicians and psychologists alike to help people break their dependency on cigarettes. The goal of this treatment is to get at the subconscious motivations and rationalizations that underlie your smoking behaviour. The treatment that you will receive will recondition those subconscious thoughts and feelings that are at the root of your smoking problem. You will be asked to listen to music that is embedded with those therapeutic messages that will by-pass your conscious mind and go straight to your subconscious. These messages have been therapeutically designed to erase all your subconscious needs and desires for cigarettes, and replace them with positive attitudes for a healthy tobacco-free lifestyle.

During the time that you will be listening to the music (and the subliminal messages), it is important that you do not attempt to think about what the specific messages might be. Such thinking will interfere with the regular procedure of allowing the therapeutic messages to penetrate your subconscious mind. Normally when people are given a message, they analyze it critically. It is important to not engage in any critical thinking about the subliminal,

therapeutic message. You will best enable these messages to have their therapeutic effect by simply allowing yourself to uncritically listen to the music.

In order to engage in subliminal re-learning to the fullest extent, simply open your mind and relax. Remember, you do not have to be concerned with deliberately trying to make this treatment work effectively. Its effectiveness only depends on your ability to uncritically listen to the music and in that way unconsciously absorb the incoming therapeutic information. Please find a position that is comfortable for you. Okay, now I want you to adopt as open and uncritical an attitude as possible. Your openness will allow the music to penetrate the barriers that are normally set up, so that the subliminal re-learning process can occur. Check that you are comfortably seated. Allow yourself to sit back and let your attention focus on the following messages. The subliminal information will be presented now.

APPENDIX D

Dropouts

Overall there were nine dropouts: three hypnotic, five non-hypnotic and one subliminal/placebo. A chi square test indicated no significant differences in frequency of dropouts in the three treatment conditions. There were also no significant differences between dropouts and non-dropouts when compared on amount smoked, motivational variables, or CURSS scores. However, a 4 X 5 (treatment X trials) mixed analysis of variance done with the dropouts removed produced a significant interaction $F(4,164) = 2.33$, $p = .009$ (Table 6).

Simple main effects analysis yielded a simple main effect for conditions at trial 2 (two weeks post-treatment) $F(4,164) = 2.81$, $p < .05$. Newman Keuls post hoc comparisons indicated that the hypnotic and nonhypnotic condition smoked significantly less than that the subliminal/placebo condition, but there were no significant differences between the subliminal/placebo and the control groups. In addition there were no significant differences between the hypnotic, non-hypnotic and control conditions.

Simple main effect analysis was also significant at trials for the hypnotic group $F(4,164) = 10.31$, $p < .01$. Newman Keuls post hoc comparisons indicated that subjects smoked significantly less on trial 2 than on the rest of the trials. They also smoked significantly more on trial 3 than trial 2, but still less than the rest of the trials. By the

fourth trial subjects' smoking levels had returned to baseline and remained there for trial 5. Simple main effect analysis was also significant at trials for the non-hypnotic condition $F(4,164) = 5.34$, $p < .01$. Newman Keuls post hoc comparisons indicated that subjects in this group smoked significantly less on both trials 2 and 3 than on the rest of the trials. Finally, by the fourth trial subjects' smoking levels had returned to baseline and remained there for trial 5.

Table 6. Anova summary table (dropouts removed).

Source of variation	D.F.	Sum of Squares	Mean Square	F	Significance of F
Group	3	1449.90	483.30	1.21	.317
Subjects	41	16331.95	398.34		
Trials	4	681.89	170.47	10.42	.000
Group X Trials	12	458.16	23.95	2.33	.009
Residual	164	2682.52	16.36		

APPENDIX E

Modified Perry et al. (1979) Questionnaire

Name: _____

Phone number: _____

Age: _____

Sex: _____

1. Does your husband/wife or some other person close to you smoke cigarettes?
2. Do your children smoke cigarettes?
3. What brand of cigarettes do you smoke?
4. How long have you been smoking?
5. At what time of the day do you smoke most heavily?
 _____morning
 _____afternoon
 _____evening
6. Have you ever tried to stop smoking?
 If so, for how long were you successful?
 What caused a return to smoking?
7. Have you ever tried to reduce your smoking?
 If so, for how long were you able to reduce your smoking?
 What caused you to increase your number of cigarettes?
8. Rate your smoking habit on each scale separately without regard to the judgements made on the other scales.

awful	8 7 6 5 4 3 2 1	nice
beautiful	1 2 3 4 5 6 7 8	ugly
dirty	8 7 6 5 4 3 2 1	clean
safe	1 2 3 4 5 6 7 8	dangerous

bad 8 7 6 5 4 3 2 1

good

distasteful 8 7 6 5 4 3 2 1

tasty

pleasant 1 2 3 4 5 6 7 8

unpleasant

9. Current need for cigarettes

How much need for: NONE SLIGHT MODERATE STRONG
1 2 3 4

- a. relieving tension
- b. after eating
- c. social support
- d. relieving boredom
- e. just straight nicotine

10. Reasons for quitting or reducing

How much need for: NONE SLIGHT MODERATE STRONG
1 2 3 4

- a. financial
- b. medical
- c. social
- d. challenge
- e. other

11. Pressure for quitting and reducing:

- a. % of friends who have quit
- b. % of friends who smoke

How much need for: NONE SLIGHT MODERATE STRONG
1 2 3 4

- c. immediate medical
social concern
- d. pressure from significant
others (family, doctor,
close friend)
- e. other

12. Expected changes:

- a. physical (greater energy,
food tastes better, improved
health)
- b. at home (spouse will stop
nagging, money to buy things)
- c. at work
- d. socially
- e. other

13. I need an idea of just how strongly you'd like to give up smoking. Would you please indicate on the "motivation thermometer" below, just how strong you feel your motivation to quit is. Mark the thermometer with a line at the level which your motivation reaches. Make sure you rate your current motivation to quit.

10 An extremely strong desire to quit.

9

8

7

6

5

4

3

2

1

0 No desire to quit at all. Perfectly
happy with smoking.

14. In a similar way, I would like to know how much you like the idea of smoking. How strong is your desire to smoke in terms of things you like about smoking? When thinking of your desire, do not consider the physical cravings you may have from time to time. Rather, tell me how much you like smoking.

- 10 Very strong love for cigarettes (want
to smoke more than anything else,
9 can't imagine not being able to do it.)
8
7
6
5
4
3
2
1
0 Never want a cigarette
No desire at all.

15. Answer yes or no for the following questions:

- 1) If I am without cigarettes for some time I am bothered or uncomfortable.
- 2) Part of the enjoyment of smoking a cigarette comes from the steps I take to light up.
- 3) I find I smoke cigarettes for their taste alone.
- 4) When I run out of cigarettes, I find it almost unbearable until I can get them.
- 5) Smoking gives me something to do with my hands.
- 6) I smoke cigarettes in order to keep myself from slowing down.
- 7) When I feel uncomfortable or upset about something, I light up a cigarette.
- 8) I've found a cigarette in my mouth and I didn't remember putting it there.
- 9) I find cigarettes pleasurable.
- 10) When I'm nervous in social situations, I smoke.
- 11) Smoking cigarettes is pleasant and relaxing.
- 12) Smoking makes me feel more awake.
- 13) I smoke to be sociable.
- 14) I find it very unpleasant to be without cigarettes for some time.

- 15) When with other people, I am more at ease if I am smoking.
 - 16) I get a real gnawing hunger for a cigarette when I have't smoked for a while.
 - 17) Handling a cigarette is part of the enjoyment of smoking it.
 - 18) Smoking seems to help me when I feel embarrassed.
 - 19) I smoke to have something in my mouth.
 - 20) I smoke cigarettes to stimulate me, to perk myself up.
 - 21) I frequently light up a cigarette without realizing I still have one burning in the ashtray.
 - 22) I smoke to appear more grown up and sophisticated.
 - 23) When I find I'm out of cigarettes, I immediately buy another pack.
 - 24) I like the taste of tobacco.
 - 25) I smoke cigarettes automatically without even being aware of it.
 - 26) I smoke with my friends to be one of the crowd.
 - 27) When I feel "blue" or want to take my mind off cares and worries, I smoke.
 - 28) Flicking ashes is one the pleasures of smoking.
 - 29) I smoke a lot at parties when I hardly know anyone.
16. Estimate the number of cigarettes you have smoked in the last week.
17. How confident are you in the chances of your being able to quit or reduce smoking? Are you completely confident (100% probability of success), certain you will fail (0% probability of success), or somewhere in between? Express your confidence of success in percentage from 0 to 100 next to each of the following.
- ____ Probability of not smoking or reducing to the desired amount for one week after the training program.
- ____ Probability of not smoking or reducing to the desired amount for one month after the training program.

_____ Probability of not smoking or reducing to the desired amount for one year after the training program.

_____ Probability of not smoking or reducing to the desired amount immediately after the training program.

2 OF/DE 2

PM-1 3½"x4" PHOTOGRAPHIC MICROCOPY TARGET
NBS 1010a ANSI/ISO #2 EQUIVALENT

APPENDIX F

Reasons for Quitting Questionnaire: Curry et al
(1990)

What are your reasons for wanting to quit smoking at this time? Below is a list of reasons that smokers that smokers may have for quitting. Read each reason and decide how much it applies to you right now. Then circle ONE number for each reason. Remember, there are no "right" or "wrong" reasons for wanting to quit smoking. Any reason is a good one.

Not at All True	A Little True	Moder- ately True	Quite True	Extre- mely True
-----------------------	---------------------	-------------------------	---------------	------------------------

I WANT TO QUIT SMOKING:

1-Because I am concerned that I will suffer from a serious illness if I don't quit smoking	0	1	2	3	4
2-To show myself that I can quit smoking if I really want to.	0	1	2	3	4
3-So that my hair and clothes won't smell	0	1	2	3	4
4-Because my spouse, children, or other person I am close to will stop nagging me if I quit smoking.	0	1	2	3	4
5-Because I have noticed physical symptoms that smoking is hurting my health	0	1	2	3	4

- 6-Because I will like myself better
if I quit smoking 0 1 2 3 4
- 7-So that I will save money on
smoking related costs such as
dry cleaning 0 1 2 3 4
- 8-Because someone has given me
an ultimatum (made a threat)
to quit. 0 1 2 3 4
- 9-Because I can graphically picture
the effects that smoking has on
my body. 0 1 2 3 4
- 10-So that I can feel in control
of my life 0 1 2 3 4
- 11-Because I won't burn holes in
clothing or furniture 0 1 2 3 4
- 12-Because I will receive a
special gift if I quit 0 1 2 3 4
- 13-Because I have known other
people who have died from
serious illnesses that were
caused by smoking 0 1 2 3 4
- 14-Because quitting smoking will
prove that I can accomplish
other things that are important
to me 0 1 2 3 4
- 15-Because I want to save
money that I spend
on cigarettes 0 1 2 3 4
- 16-Because people I am close to
will be upset with me if I
don't quit 0 1 2 3 4

17-Because I am concerned that
smoking will shorten my life 0 1 2 3 4

18-To prove to myself that I am
not addicted to cigarettes 0 1 2 3 4

19-So that I won't have to clean
my house or car as often 0 1 2 3 4

20-Because I will receive a
financial reward for quitting (money
from a friend, or family member,
bonus from work, etc.) 0 1 2 3 4

APPENDIX G

**Carleton University Responsiveness to Suggestion
Scale**

Name _____ Date _____
Age _____ Sex _____ Occupation _____
Telephone _____ Student Number _____

PLEASE DO NOT OPEN this booklet until specifically instructed to
do so.

Now, in your own words please list all of the suggestions you can remember. You have two minutes to do this.

PLEASE DO NOT TURN THIS PAGE until you are specifically instructed to do so.

PLEASE DO NOT RETURN TO PAGE 2.

PLEASE DO NOT TURN THIS PAGE until you are specifically instructed to do so.

PLEASE DO NOT TURN TO EARLIER PAGES

Now, in your own words please list all of the suggestions you can remember. You have two minutes to do this.

PLEASE DO NOT TURN THIS PAGE until you are specifically instructed to do so.

PLEASE DO NOT TURN TO EARLIER PAGES

Now, in your own words please list all of the suggestions you can remember. You have two minutes to do this.

PLEASE DO NOT TURN THIS PAGE until you are specifically instructed to do so.

SECTION ON OBJECTIVE, OUTWARD RESPONSES

Listed below in chronological order are the specific suggestions you were administered following the standard hypnotic induction procedure. We wish you to estimate whether or not you objectively responded to these suggestions, that is, whether or not an onlooker would have observed that you did or did not make certain definite responses by certain specific, predefined criteria. Thus, in this section we are interested in your estimates of your outward behaviour and not in what your inner, subjective experience of it was like. Later on you will be given an opportunity to describe your inner, subjective experience, but in this section refer only to the outward behavioural responses irrespective of what the experience may have been like subjectively.

It is understood that in some cases your estimates may not be as accurate as you might wish them to be and that you might even have to guess. But we want you to make whatever you feel to be your best estimates.

Beneath is a description of each of the six suggestions are sets of two responses, labeled A and B. Please circle either A or B for each question, whichever you choose to be the most accurate. Please answer every question. Make sure that you do not skip any questions. Please answer every one.

I. Arm Rising (Right Arm)

You were asked to extend your right arm straight out in front of you, and you were told that your arm was rising into the air. Would you estimate that an onlooker would have observed that your arm had risen at least six inches (before the time you were asked to replace your arm in your lap)?

Circle one: A. My arm rose at least six inches.

B. My arm rose less than six inches.

II. Arms Moving Apart

You were asked to extend your arms straight out in front of you with the fingers of one hand touching the fingers of the other. You were then told that your arms were moving apart. Would you estimate that an onlooker would have observed that your hands had moved apart by at least six inches (before the time you were asked to replace them in your lap)?

Circle one: A. My hands had moved apart at least six inches

B. My hands moved apart less than six inches

III. Arm Rigidity (Left Arm)

You were asked to hold your left arm straight out in front of you, and were told that the arm was becoming stiff and rigid and that it would not bend. You were then asked to try and bend it. Would you estimate that an onlooker would have observed that there was less than two inches of arm bending (before you were told that your arm was no longer stiff and to replace it in your lap)?

Circle one: A. My arm was bent less than two inches by then

B. My arm was bent two or more inches by then

IV. Arm Heaviness (Right Arm)

You were asked to place your right forearm on the table with your hand facing down. You were then told how heavy your arm and hand felt and asked to try to lift them from the table. Would you estimate that an onlooker would have observed that you did not lift your hand and arm at least one inch up from the table (before being told that your arm was no longer heavy)?

Circle one: A. I did not lift my arm and hand at least one inch by then

B. I did lift my arm and hand an inch or more by then

V. Experiencing Music

You were told that a record player had been brought into the room, that you would hear it playing Jingle Bells, and that you would move your head to keep time to the tune. Would you estimate that an onlooker would have observed you to make recognizable movements of the head (before you were told that the record player had been turned off)?

Circle one: A. I did recognizably move my head to the tune

B. I did not recognizably move my head to the tune

VI. Experiencing a Kitten

You were told that a kitten was sitting in your lap. Then you were asked to look at the kitten and to pet it with your hand. Would you estimate that an onlooker would have observed you to make a petting movement with your hand?

- Circle one: A. I did make a petting movement with my hand
B. I did not make a petting movement with my hand

PLEASE DO NOT RETURN TO EARLIER PAGES

SECTION ON SUBJECTIVE, INNER EXPERIENCE I

In this section we are interested in your inner subjective experiences instead of your outward behavior. We want to find out about what you experienced during each of the suggestions you were given. Please read each question carefully and answer it honestly. The outward responses people make to a suggestion may or may not correspond to their inner experience. For example, take a person who's outward behavior is arm rising when given the suggestion that their arm is light and moving upward. In some cases a person may have experienced his or her arm as feeling light. In other cases, however, the person's arm may have moved upward even though it did not feel the least bit light. The important thing to keep in mind is that one type of experience is no better or no worse than the other. This is a scientific study, and all we are interested in is getting at the truth of what people experience. So please be honest in answering each of the following questions. Please answer every question. Make sure that you do not skip any questions.

For each question, choose the one alternative that best describes your experience.

I. Arm Rising (Right Arm)

You were told that your arm was feeling lighter and lighter and was rising in the air. You were asked to imagine that it was like a balloon and was being filled with air.

During this suggestion my arm felt light:

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

II. Arms Moving Apart

You were told that your outstretched arms were moving apart, and that they felt like a force was repelling them and pushing them apart.

During this suggestion, my arms felt like a force was pushing them apart:

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

III. Arms Rigidity (Left Arm)

You were told that your outstretched left arm was becoming stiff, rigid, and unable to bend. You were asked to imagine the arm in a splint.

During this suggestion, my arm felt stiff and rigid:

- (a) Not at all
- (b) To a slight degree

- (c) To a moderate degree
- (d) To a great degree

IV. Arm Heaviness (Right Arm)

You were told that your arm and hand were very heavy, so heavy that you couldn't lift them from the table. You were asked to imagine heavy weights placed on your hand and arm.

During this suggestion, my arm and hand felt heavy:

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

V. Experiencing Music

You were told that you would hear the song Jingle Bells and that you would move your head in time with the music.

During this suggestion, I felt like I was hearing the tune Jingle Bells:

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

VI. Experiencing a Kitten

You were told that you would see a kitten in your lap and that you would pet the kitten.

During this suggestion, I felt like I was seeing a kitten:

- (a) Not at all

- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

VII. Forgetting the Suggestions

You were told that you would be unable to remember any of the suggestions you had been given until you heard a tap and the words "Now you can remember everything". You were told that you would be unable to remember the suggestions even when you were asked to try to remember.

During this suggestion, I forgot the suggestions:

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

PLEASE DO NOT RETURN TO EARLIER PAGES

SECTION ON SUBJECTIVE, INNER EXPERIENCES II

In this section we are interested in a particular class of subjective inner experiences. We want to find out about the extent to which you experienced your outward behaviour to each suggestion as happening automatically and without a feeling of effort. For example, take a person whose outward behaviour is to not bend their arm when they are told that the arm is stiff and unable to bend. Such a person may have felt that his or her arm was unable to bend. For this person it may have felt like the arm became stiff and unable

to bend all by itself. In other cases, however, a person may not bend their arm even though they know that they could have bent it if they chose to. This person would have had the feeling of voluntarily choosing not to bend the arm. Remember, one type of experience is no better and no worse than the other. We are equally interested in finding out about experiences that feel automatic and also about those that feel voluntary. All we are interested in is getting at the truth about what people experience. So, please be honest in answering each of the following questions. Please answer every question. Make sure you do not skip any questions.

For each question choose the one answer that best describes your experience.

I. Arm Rising (Right Arm)

You were told that your arm was light and rising in the air.

During this suggestion, my arm felt like it rose in the air by itself. I experienced that

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

Remember: if you chose to lift your arm voluntarily, or if your arm did not feel like it rose by itself, you should choose alternative (a).

II. Arms Moving Apart

You were told that your outstretched arms were moving apart.

During this suggestion, my arms felt like they were moving apart by themselves. I experienced this:

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

Remember: if you chose to move your arm voluntarily, or if your arms did not feel like they moved by themselves, you should choose alternative (a).

III. Arm Rigidity (Left Arm)

You were told that your outstretched arm was becoming stiff and unable to bend.

During this suggestion my arm felt like it was unable to bend. I experienced this:

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

Remember: if you chose voluntarily to not bend your arm, or if your arm did not feel unable to bend you should choose alternative (a).

IV. Arm Heaviness (Right Arm)

You were told that your arm and hand were too heavy to lift from the table.

During this suggestion, my arm felt unable to be lifted. I experienced this

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

Remember: if you chose voluntarily to not lift your arm, or if your arm did not feel unable to lift you should choose alternative (a).

V. Experiencing Music

You were told that you would hear the song Jingle Bells.

During this suggestion the tune Jingle Bells seemed to occur automatically, without any effort on my part. I experienced that

- (a) Not at all
- (b) To a slight degree
- (c) To a moderate degree
- (d) To a great degree

Remember: if experiencing the tune seemed to take a good deal of effort on your part, or if you did not experience the tune choose alternative

(a).

VI. Experiencing a Kitten

You were told that you would see a kitten in your lap.

During this suggestion the image of a kitten seemed to occur automatically, without any effort on my part. I experience this

- (a) Not at all
- (b) To a slight degree

(c) To a moderate degree

(d) To a great degree

Remember: if getting an image of a kitten seemed to take a good deal of effort, or if you did not get an image at all choose alternative (a).

VII. Forgetting the Suggestions

You were told that you would be unable to remember the suggestions you had been given.

During this time the suggestions seemed to disappear automatically from my memory, they seemed to just go away by themselves. I experienced this

(a) Not at all

(b) To a slight degree

(c) To a moderate degree

(d) To a great degree

Remember: if forgetting the suggestions seemed to require effort on your part, if you had to "try and forget", or if you felt that you did not forget anything, you should choose alternative (a).

APPENDIX H**Crowne-Marlowe Questionnaire**

DIRECTIONS: Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. Circle the corresponding letter to the right of the statement.

1. Before voting, I thoroughly investigate the qualifications of all the candidates. **T F**
2. I never hesitate to go out of my way to help someone in trouble. **T F**
3. It is sometimes hard for me to go on with my work if I am not encouraged **T F**
4. I have never intensely disliked anyone. **T F**
5. On occasion I have had doubts about my ability to succeed in life. **T F**
6. I sometimes feel resentful when I don't get my way. **T F**
7. I am always careful about my manner of dress. **T F**
8. My table manners at home are as good as when I eat out in a restaurant. **T F**
9. If I could get into a movie without paying and be sure I wasn't seen, I would probably do it. **T F**
10. On a few occasions, I have given up doing something because I thought too little of my ability. **T F**

11. I like to gossip at times. T F
12. There have been times when I felt like rebelling against people in authority even though I knew they were right. T F
13. No matter who I'm talking to, I'm always a good listener. T F
14. I can remember "playing sick" to get out of something. T F
15. There have been occasions when I took advantage of someone. T F
16. I'm always willing to admit it when I make a mistake. T F
17. I always try to practice what I preach. T F
18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people. T F
19. I sometimes try to get even, rather than forgive and forget. T F
20. When I don't know something, I don't at all mind admitting it. T F
21. I am always courteous, even to people who are disagreeable. T F
22. At times I have really insisted on having things my way. T F
23. There have been occasions when I felt like smashing things. T F
24. I would never think of letting someone else be punished for my wrong doings. T F

25. I never resent being asked to return a favour. **T F**
26. I have never been irked when people expressed ideas very different from my own. **T F**
27. I never make a long trip without checking the safety of my car. **T F**
28. There have been times when I was quite jealous of the good fortune of others. **T F**
29. I have almost never felt the urge to tell someone off. **T F**
30. I am sometimes irritated by people who ask favours of me. **T F**
31. I have never felt that I was punished without cause. **T F**
32. I sometimes think when people have a misfortune they only got what they deserved. **T F**
33. I have never deliberately said something that hurt someone's feelings. **T F**

END

1 3-1 2-9 3

FIN