The Treatment Utility of the Therapeutic Reactance Scale in Relation to Single Session Hypnosis for Smoking Cessation

Gregory N. Vaughan
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THE TREATMENT UTILITY OF THE THERAPEUTIC REACTANCE SCALE IN RELATION TO SINGLE SESSION HYPNOSIS FOR SMOKING CESSATION

by

Gregory N. Vaughan

A Dissertation Submitted to the Faculty of The Graduate College in partial fulfillment of the requirements for the Degree of Doctor of Philosophy Department of Psychology

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THE TREATMENT UTILITY OF THE THERAPEUTIC REACTANCE SCALE IN
RELATION TO SINGLE SESSION HYPNOSIS FOR SMOKING CESSATION

Gregory N. Vaughan, Ph.D.
Western Michigan University, 1995

This study examined the efficacy of three different hypnotic suggestion scripts each delivered in a single session of hypnosis for smoking cessation as mediated by reactance scores on the Therapeutic Reactance Scale (TRS) (Dowd, Milne, & Wise, 1991). Consecutive clinical trials were used to assign 48 subjects to treatment groups such that an equal number of subjects received: (1) direct suggestions, (2) suggestions that reframed the problem, (3) suggestions not specifically related to smoking cessation, and (4) a delayed treatment waiting list. Each subject rated the believability of treatment efficacy on a Likert type scale.

Four categories of the dependent variable were measured at one week and one month following hypnosis: Quit, Slip, Reduced, and Never Quit. Self reported smoking rates and alveolar carbon monoxide ($\text{CO}_a$) were used as measures of smoking status.

Only two of the 48 treatment subjects quit smoking at the one month follow-up. Overall, less than 40% of the subjects reported a reduction in smoking sufficient enough to be categorized as Quit, Slip, or Reduced at either follow-up. By contrast, no waiting list subject changed smoking status at any time prior to treatment. Due to
the small number of subjects who Quit or Slipped, they were combined with those who Reduced for statistical analysis. At one week follow-up, outcome was dependent upon treatment (Chi-square $\alpha=.024$). Treatment 1 (direct suggestions) and Treatment 3 (nonspecific suggestions) were more effective than Treatment 2 (reframe suggestions). At one month, Chi-square tests were nonsignificant.

No significant differences were obtained between TRS scores in relation to smoking status at either follow-up. There was a moderate correlation between the Behavioral score and the level of COa at the one month follow-up ($r=0.47$).

A COa level greater than 8 ppm was used to detect smokers and was compared to self reported smoking status. Agreement at one week follow-up was 84.85% and at one month was 90.47%. False positive and false negative rates were low. The use of COa to validate self reported smoking status, at least at a screening level, was supported.
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CHAPTER I

INTRODUCTION

Inhaling tobacco smoke while actively smoking cigarettes continues to be the largest preventable cause of death in the United States population (USDHHS, 1986). Approximately 33% of the adult population in the United States smoke cigarettes (Glasgow & Lichtenstein, 1987). This point prevalence rate indicates a decline since 1964 when the surgeon general's office issued its first report linking cigarette smoking with health problems. In fact, approximately 1.3 million persons per year have quit smoking since 1974 (Pierce et al. 1989). In spite of this decline, tobacco use, particularly in the form of cigarette smoking, is responsible for over 300,000 deaths per year in the United States (USDHHS, 1986).

Direct and indirect costs associated with smoking related health problems amount to billions of dollars. Carmody (1990) reported that $16 billion was spent in 1985 providing direct health care to patients with smoking related illnesses. In terms of loss of productivity and earnings due to smoking related disability, death, and mortality the cost was an additional $37 billion (Fielding 1985). The USDHHS (1986) report noted that cigarette smoking is a major cause of cancer. It not only causes lung cancer, but cancer at other sites such as the pancreas and urinary bladder. It also causes cardiovascular
diseases, affects perinatal mortality, and is the single leading cause of chronic obstructive lung diseases.

When looking only at coronary heart disease, chronic obstructive pulmonary disease, and cancer as contributing to health care costs, men under the age of 45 who smoke more than two packs a day incur an additional health care cost of $56,000 in their lifetime (Oster, Colditz & Kelly, 1984, p. 120). Women fare a little better; their total cost estimate is over $19,000 (Oster, Colditz & Kelly, 1984, p. 121). These same authors report that the health benefit of quitting smoking for the male is $34,000.00 and for the female it is $12,000.00 at the same age and range of smoking (Oster, Colditz & Kelly, 1984, pp. 121-122). These dollar amounts are reported in terms of 1980 dollars, (or twice that amount in 1995 dollars). Thus, it is apparent that there can be a strong financial return in health care for smoking cessation at both the societal and individual levels. The decreased costs are directly reflective of the decreased illnesses experienced by former smokers. For example, from 5-10 years after quitting, mortality rates due to coronary heart disease approximately match rates of those who have never smoked (Blumenthal, Burg, & Roark, 1986). The news is also encouraging in terms of cancer risks. Ten to twenty years after stopping smoking, the risks of dying from lung, laryngeal, oral, and esophageal cancer approaches the same risks as the nonsmoker (Cullen & Greenwald, 1986). In view of the importance of stopping smoking, many treatment programs have been designed to assist the individual in smoking cessation. These treatment packages can be roughly divided into three categories: behavioral, pharmacological, and hypnosis.
Behavioral Therapy Approaches

Behavioral strategies to eliminate smoking can be broken down into three main types of treatment plans: aversive strategies, nicotine fading, and self control strategies (Lichtenstein & Mermelstein, 1984).

Aversive strategies have consisted in recent years primarily of satiation in which the subject is required to hold smoke in the mouth with occasional inhalations and thus experience taste satiation (Tori, 1978) and rapid smoking in which a subject is required to smoke at a rate that produces significant increases in heart rate, nicotine levels, and blood gases such that noxious effects are experienced (Danaher, 1977).

Nicotine fading is a technique in which smokers attempt to withdraw gradually from the physiological effects of nicotine by setting a target date for quitting and switching to brands of cigarettes with progressively lower tar/nicotine levels (Foxx & Brown, 1979). Rapid smoking, satiation, and nicotine fading have been shown to be equally effective when compared to each other and, after 16 sessions, efficacies have ranged from 48% to 68% self reported abstinence at one month follow-up (Lando & McGovern, 1985).

Whereas aversive strategies tend to operate from a respondent paradigm and nicotine fading has both pharmacological and psychological tenets, self control strategies view cigarette smoking more from a social learning perspective or operant paradigm that involves an analysis of antecedents, behavior, and consequences. For example, "rewards" have been provided contingent upon the reduction of carbon monoxide levels (Stitzer & Bigelow, 1984). Contingency contracting has also been used in which the subject must
contribute money to people or organizations that they dislike (Curry, Marlatt, Gordon, & Baer, 1988). Stimulus control procedures have consisted of helping subjects identify a hierarchy of situations in which they are likely to smoke and gradually eliminate smoking within the hierarchy (Marston & McFall, 1971). A more recent study that arranged situations into hierarchies and taught responses alternative to smoking resulted in 50% self reported abstinence at 8 weeks as measured by a daily self report diary, and 16.6% self report abstinence at a one year telephone contact follow-up (O'Connor & Physant-Skov, 1989). It appears that stimulus control procedures alone have not been that effective and Best & Bloch (1979) have speculated that this is due to procedures requiring a gradual reduction in cigarette smoking rather than immediate abstinence. Successive approximations to quitting involves establishing one day a week as a no smoking day and adding "quit days" in subsequent weeks (Rutter, 1990). This procedure resulted in 17% of the subjects reporting being abstinent at the end of 6 or 10 weeks of treatment. A correspondence program that refunded a $60 deposit for self reported smoking cessation resulted in 20% of the subjects being successful (Jeffery, Hellerstedt, & Schmidt, 1990). Self reports of abstinence were validated by saliva cotinine, a specific metabolite of nicotine. In general it appears that behavioral interventions have resulted in end of treatment outcomes that range from approximately 20% to 85%.

Pharmacological Approaches

Pharmacological aids to smoking cessation include "over the counter" preparations such as Bantron and Nicoban, containing lobeline, which has effects similar
to nicotine. Lobeline has not been demonstrated to be any more effective than placebo. Raw (1978) noted "...the preponderance of evidence indicates that lobeline has no drug specific smoking deterrent actions" (as quoted in: Kozlowski, 1984, p. 716). Tabmint, another "over the counter" product, contains silver acetate which when combined with smoke produces an unpleasant taste. According to Kozlowski (1984) Tabmint has not been proven effective and can produce argyrism, a permanent bluish staining of the mouth or skin.

The most common prescription product for smoking cessation during the 1980's in the United States was the nicotine containing gum, Nicorette. The rationale behind its use is that it allows the subject to stop smoking in two stages. Stage one is a behavioral stage in which the subject learns to be a nonsmoker while still receiving nicotine to attenuate withdrawal symptoms. Stage two, is a reduction in use of the gum to gradually eliminate nicotine dependence. In a double blind study that used gum plus a comprehensive treatment program of 6 to 15 sessions reported by Fagerstrom (1982), the self reported abstinence rates of subjects who used the gum were 90% at one month versus an abstinence rate of 60% for individuals who did not use the gum. Self reports were corroborated by carbon monoxide measurement.

It appears that the pharmacological treatment of choice in the 1990's is the transdermal nicotine patch. The patch is designed to provide a steady concentration of nicotine such that withdrawal symptoms are attenuated. Patches of decreasing concentrations can be prescribed in succession to titrate the patient off nicotine while precluding withdrawal complaints. Its pharmacological rationale is similar to that of
nicotine chewing gum in that smoking behavior is eliminated through nicotine replacement and fading. However, there is a behavioral difference. The disadvantage of nicotine chewing gum is that it is applied noncontinuously and the potential nonsmoker provides it contingently in response to decreased nicotine levels. The nicotine supplying behavior and immediate reinforcement of the nicotine effects is not extinguished (Buchkremer, Bents, Horstmann, Opitz, & Tolle, 1989). Thus, addictive behaviors that are both topographically and functionally similar to lighting a cigarette may be maintained with nicotine chewing gum. The patch has not been approved by the FDA as an effective treatment alone and recommends concomitant behavioral treatment (G. J. Alessi, personal communication, February, 1995). The Physician’s Desk Reference (1993, p. 1381) noted, “Patients are more likely to quit smoking if they are seen frequently and participate in formal smoking-cessation programs.”

Buchkremer, Bents, Horstmann, Opitz, & Tolle (1989) randomly assigned 131 smokers to three treatment conditions. Each subject received 9 weeks of behavior therapy. One group was treated with the nicotine patch, another group with a placebo patch, while the third group received only the behavior therapy. By self report, at the end of 9 weeks, the nicotine patch group showed 69% abstinence; the placebo patch, 51.2%; and behavioral training alone, 44.4%. Self report at end point was validated by urinalysis.

A more recent study by Tonnesen, Norregaard, Simonsen, & Sawe (1991) provided one year follow up on smokers treated for 16 weeks with nicotine patches versus placebo patches. This study did not provide behavior treatment, but only a few minutes of advice on smoking cessation and how the patch works at each of the seven
clinic visits. Total self reported abstinence without lapses for nicotine patches was 11% and for placebo patches was 2% at one year. Self reports were corroborated by carbon monoxide and salivary cotinine measurements.

**Hypnotherapy**

Clinical hypnosis is a therapeutic procedure designed to promote a more rapid behavior change than is achieved through talk therapy alone. Skinner (1957, p. 160) notes that hypnosis is a form of verbal behavior in which the therapist is the speaker and the client is the listener. In his analysis, the induction procedure establishes verbal stimulus control of the listener's behavior to the exclusion of other stimulation. This is established by a process in which the therapist begins with statements that are "so obviously true that the listener's behavior is strongly reinforced. Later a strong reaction is obtained to statements that would otherwise have led to little or no response." (Skinner, 1957, p.160). Similar to this procedural definition, Kihlstrom (1985, pp. 385-386) defined hypnosis as a social interaction in which the subject responds to the hypnotist's suggestions that involve alterations in perception, memory, and voluntary action. Haley (1963, pp. 30-31) has described hypnosis as a special form of communication in which the therapist persuades a subject to do something which the subject then denies was a voluntary response. In other words, the response was believed to be more under the control of external than internal factors.

Many induction techniques have appeared over the years to improve establishing this verbal control. One frequent strategy is for the therapist to observe responses
produced by the client from moment to moment and comment on their occurrence. For example, as a client relaxes there is an automatic reduction in respiration rate. The therapist may make a statement such as "Your breathing is becoming slower and slower as you begin to enter hypnosis" (Kirsch, 1990, p. 167). The therapist may also use a strategy that is essentially "win-win" in that no matter what the subject's response, it is the correct one. For example, the subject may be instructed to hold an arm out to the side with instructions such as "We don't know which will happen. Your arm may become lighter as if it were being lifted by a balloon and gradually float upward, or you may become more aware of a growing feeling of heaviness in your arm." Depending on the response noted, the therapist quickly focuses either on levitation or heaviness (Kirsch, 1990, p. 167). These kinds of statements tend to strengthen the "control" that the therapist's statements have over the client's responses and thus establishes a setting in which verbal stimuli control responses to the exclusion of other stimuli. In general these types of responses are spurious to the post hypnotic behavior change that is desired. However, they appear important in affirming the trance experience for the client (Hammond, 1988). Affirmations of this sort enhance the client's expectancy of positive outcome and thus increase the probability that treatment in relation to the presenting problem will be successful (Kirsch, 1990, p. 162).

When hypnosis itself is the subject of a scientific study, the hypnotizability of the subject is assessed. In these assessments, unilateral directions are given such that the "win-win" proposition is eliminated. For example, the subject is told that the arm will float up and the option of it becoming increasingly heavy is not provided. Two of the
more popular standardized assessments of hypnotizability are the Harvard Group Scale of Hypnotic Susceptibility, Form A, (Shor & Orne, 1962) and the Stanford Scale of Hypnotic Susceptibility, Forms A & B (Weitzenhoffer & Hilgard, 1959). Good performance on these hypnotizability scales indicates that the subject can be easily hypnotized, whereas a poor performance indicates that the subject is a poor candidate for hypnosis. Thus, the use of these scales in a clinical application may hinder the establishment of the verbal control by the therapist or decrease the expectancy of the client that the therapy will work if a poor performance is obtained. Kirsch (1990, p. 50) reported meta-analyses indicating that client expectancies account for at least half of the variance of effects of all models of psychotherapy. In the study of hypnotizibility and smoking treatment outcome reviewed by Holroyd (1991) no relation was found between hypnotizibility and either immediate quitting or continued abstinence.

Much of the literature addressing the use of hypnosis to promote smoking cessation is at the level of anecdotal report or case studies. However, Holroyd (1980) published a rather extensive review of 17 controlled studies published since 1970 that focused on hypnosis and smoking abstinence. Abstinence rates ranged from 4% to 88%. Her review examined six methodological variables that may have contributed to the variance in outcomes. They were: (1) subject population, (2) individual vs. group hypnosis, (3) standardized vs. tailored treatment suggestions, (4) self hypnosis, (5) number of sessions and time span covered by the treatment, and (6) adjunctive treatment. Among these variables, tailoring the suggestions appeared to be the most salient. Four of the five more successful studies used suggestions tailored to the individual patient's needs or
motivations and produced six months abstinence rates ranging from 60% to 88%. Ten of the reviewed studies reported abstinence rates of less than 40% at six month follow-up and all of them used standardized suggestions. Thus, assessing the reasons why people want to stop smoking (e.g. health, financial, social pressure, or appearance) seems to have treatment utility (Hayes, Nelson, Garrett, 1987) for producing long term change.

Other variables also contributed to treatment success. Holroyd (1980) concluded that success was enhanced when there were several hours of treatment, and when there was adjunctive counseling or telephone follow-up. Holroyd (1980, p. 353) also noted "when most of these conditions are met, at least half and frequently more than two-thirds of the smokers who begin treatment stop smoking and remain abstinent at least six months. In comparison only 30% of people treated by non-hypnosis interventions remain abstinent after three months (89 studies summarized by Lichtenstein & Danaher, 1976)."

Kirsch (1990, p. 48) also reported the results of meta-analyses of differential effects of various psychotherapies. Hypnotherapy was listed as most effective with an effect size of 1.82. Cognitive therapy and behavior therapy were second and third with respective effect sizes of 1.58 and 1.02. It would appear that the effective clinician must take the client's expectations into account and also construct a therapeutic atmosphere that enhances expectations for success. It should be noted that most of these studies employed client verbal report of improvement as the major dependent variable.

Given the effectiveness of hypnotic interventions as noted above, it is interesting that a search of the database, Psych Info (which includes Psychological Abstracts from 1967 to the present) and a search of the indices of the journals, Addictive Behaviors, the
International Journal of Clinical And Experimental Hypnosis, and American Journal of Clinical Hypnosis back to 1980 located only two publications of controlled studies using hypnosis to treat cigarette smoking since Holroyd's 1980 literature review. In a comparison of hypnosis, focused smoking, attention placebo, and a waiting list control, no significant differences were found in treatment effects (Hyman, Stanley, Burrows, & Horne, 1986). However, it is interesting to note that in their study hypnosis and attention placebo had equivalent effects at three months and six months follow-up with abstinence rates of 40% at each point while focused smoking, which is an aversive procedure, showed an abstinence rate of approximately 35% at three months follow-up and 20% at six months follow-up. Hyman, et al. (1986) used serum thiocyanate to corroborate self monitoring reports.

Whereas, the Hyman, et al. study of 1986 used four sessions of hypnosis, Williams & Hall (1988) studied the effect of a single session of hypnosis and reported that 45% of the subjects who received hypnosis were abstinent by self monitoring at 48 week follow-up, while none of the subjects in either the placebo control or the no treatment group were abstinent by self report at any time during the study.

Others have studied the use of single session hypnosis for smoking cessation. Spiegel's (1970) article is the seminal study in regards to single session hypnosis. He reported that 20% of 271 patients were abstinent by self report for at least six months. Those who did not return the questionnaire were counted as nonabstainers. In another study, 45% of 75 patients reported abstinence at 6 months follow-up (Stanton, 1978). Using telephone interviews at 6 month follow-up, Berkowitz, Ross-Townsend, &
Kohberger (1979) found a 25% self reported rate of abstinence. Using a three months follow-up, Javel (1980) reported 60% abstinence after a single session of hypnosis. In a non-controlled study that consisted of a retrospective review of 34 clients at 3 month follow-up, Marriott & Brice (1990) reported 29% were abstinent by self report after 12 weeks. Self reports on the efficacy of single session hypnosis have ranged from 20% to 60%. These data are suspect however, in that they are not necessarily the results of controlled studies and biochemical measures were not used to corroborate self report.

Treatment Utility and the Therapeutic Reactance Scale

An effective intervention based on a single session of hypnosis would certainly be valuable due to its cost effectiveness for the patient. Methods proven to enhance the viability of single session hypnotic treatments would be valuable. One method might be to tailor suggestions given to the subject based on information obtained in a standardized intake procedure.

An intake assessment battery that contributes to positive treatment outcomes has treatment utility (Hayes, Nelson, & Jarrett, 1987). Holroyd's (1980) review of the hypnotic interventions used to treat smoking indirectly reports on the treatment utility of assessing each subject's motivation for stopping smoking. It was reported that suggestions that were tailored towards these motivations showed more treatment success. However, what was not examined was the style of the suggestion.

One common distinction in style of suggestions is an authoritarian direct suggestion vs. a reframe of the problem. "To reframe, then, means to change the
perceptual and/or emotional setting or viewpoint in relation to which a situation is experienced and to place it in another frame that fits the "facts" of the same concrete situation equally well or even better, and thereby changes its entire meaning." (Watzlawick, Weakland, & Fisch, 1974, p. 95). For example, if the subject reports the problem as "I can't stop smoking", this may be reframed into one in which the task is to, "treat your body with respect and protection and thereby promote health." An authoritarian direct style could be characterized as one in which suggestions such as "You will no longer have the urge to smoke" are given. Both styles can use individually tailored suggestions based on each subject's personal motivations for quitting.

An assessment device administered prior to treatment that distinguishes which subject is most likely to benefit from which of the two different styles of suggestion could contribute greatly to enhancing treatment outcome. It appears that the clinical application of hypnosis to smoking cessation has indicated a need to provide finer diagnostic categories than simply smoking vs. nonsmoking. The evidence for the need for further distinction is indicated by the differential response rate to treatment seen within the larger class of people diagnosed as smokers. There may be some functionally distinct subtypes of subjects for which distinct types of treatment are implicated.

One assessment device that may prove useful is the Therapeutic Reactance Scale (TRS) (Dowd, Milne, & Wise, 1991). The scale is based upon the theory of psychological reactance (J. Brehm, 1966, pp. 1-16; & Brehm & Brehm, 1981, pp. 1-117). The theory postulates an intervening, hypothetical variable called "reactance." "It is the motivational state that is hypothesized to occur when a freedom is eliminated or
In general, the theory states that threats to an individual's ability to perform any "free behaviors" will arouse a motivational state of reactance that attempts to restore the freedom to behave. The theory has implications for the practice of psychotherapy in that high reactance clients would be expected to resist therapeutic directions or suggestions and thus show slower progress or treatment outcomes (Dowd, Milne, & Wise, 1991).

The TRS consists of 28 items that are rated along a 4 point Likert Scale (strongly disagree, disagree, agree, strongly agree). It yields a total reactance score, behavioral reactance score, and a verbal reactance score. Only one study has assessed its treatment utility in relation to smoking cessation. Graybar, Antonunccio, Boutilier, & Farble (1989) obtained reactance scores on 104 male veteran smokers and studied the relationship between the reactance scores and physician advice to quit smoking. The physician's advice was varied according to high and low amounts of advice presented in either a positive or negative tone. No significant relationships were detected between verbal reactance or total reactance and the amount or tone of physician advice. However, a significant relationship was detected between behavioral reactance and amount of physician advice. Subjects who scored low in behavioral reactance responded better to high amounts of physician advice regardless of its negative or positive tone. It was also found that subjects who scored high in behavioral reactance did better when receiving low amounts of negatively toned advice. In this study, the TRS shows apparent treatment utility in that it can help guide physicians in the amount and tone of advice that they give to their patients.
to promote smoking cessation. It is conceivable that the TRS may produce assessment information with similar implications for hypnotic interventions.

Only one study has compared hypnosis containing suggestions to stop smoking with hypnosis without smoking cessation suggestions (Muga, unpublished dissertation, 1989). This study found no difference between the two groups. Holroyd (1991) serendipitously found a correlation between 6 months abstinence and subjects' hypnosis expectancy. Those subjects who answered an intake question higher on a Likert scale in the direction of "hypnosis will work automatically, without any effort on my part," as opposed to "hypnosis will have a facilitative, supportive effect on my efforts to stop smoking" were more likely to be abstinent by self report at six months. These two studies indicate that the script of suggestions used after the trance induction may not be as relevant as the hypnotic procedure itself in promoting positive therapeutic outcomes.

Dependent Variables and Variability in Treatment Outcome Studies

Many studies of treatments for smoking cessation have relied on subjects' self reported smoking rates obtained on a retrospective questionnaire as the sole dependent measure. The retrospective nature makes the process prone to distortion. Self monitoring by the use of a diary or a record book can increase accuracy, but may have reactive effects and thus, confound the analysis of the specificity of treatment effects. Smoking rate is a continuous variable and may be more difficult to report accurately. A categorical variable such as smoking status may increase the accuracy of self report.
Much smoking research has relied on the subjects' report of symptoms (behavior/conditions not available for observation by the experimenter) rather than signs (behavior/conditions observed by the experimenter) to determine treatment efficacy. Verbal behavior is always under multiple control and thus, subjects' self report may be reactive to the prevailing setting, establishing operation (motivation), audience, or consequences. The use of physiological measures such as alveolar carbon monoxide helps provide objective (sign data) independent corroboration of the verbal self report (symptom data).

Alveolar carbon monoxide (COa) has been shown to discriminate smokers from nonsmokers (Colletti, Supnick, Abueg, 1982; Horan, Hackett, & Linberg, 1978; Lando, 1975; Petitti, Friedman, & Kahn, 1981; Vogt, Selvin, Widdowson, & Hulley, 1977). Typical COa levels for individuals who smoke regularly are three times greater than for individuals who claim abstinence (Vogt, Selvin, Widdowson, & Hulley, 1977). Lando (1975) found COa levels between 5 and 11 ppm for subjects who reported abstinence and COa levels between 36 and 80 ppm for smokers except for one person who smoked only 3 or 4 cigarettes per day in which the COa level was 25.5 ppm. Another study found a COa level of 8 ppm produced the highest rate of agreement between self report of smoking status and COa determinations (Hughes, Epstein, Andrasik, Neff, & Thompson, 1982). These same authors reported 88% agreement between COa levels and self reports of smoking. Much of the variability reported in the literature on smoking cessation may be the result of variability in the quality of dependent variable data collected across the studies.
Purpose of the Study

This study is designed to test the treatment utility of the Therapeutic Reactance Scale in relation to three types of single session hypnotic interventions and a waiting list control group. The three types of hypnotic sessions can be characterized as (1) authoritarian/direct suggestions to stop smoking, (2) suggestions that reframe the problem, and (3) suggestions not specifically related to smoking cessation.

In keeping with the theory of therapeutic reactance, it is anticipated that the direct suggestions to stop smoking are a threat to personal freedoms, whereas a reframe of the problem is nonthreatening. If this is true the results should show the following relationships among the treatment groups:

1. Low reactance scorers will respond better to direct suggestions than will high scorers.
2. High reactance scorers will respond better to reframe suggestions than will low scorers.
3. Low scorers with direct suggestions will respond better than low scorers to nonspecific suggestions.
4. High scorers with reframe suggestions should respond better than high scorers to nonspecific suggestions.

If hypnosis alone is sufficient for positive treatment outcomes, then both high and low reactance scorers who receive suggestions not specifically related to smoking cessation should respond better than control subjects.
Thus, the research questions to be addressed are:

1. Does the Therapeutic Reactance Scale have treatment utility for single session smoking cessation hypnosis?

2. Are differential treatment outcomes obtained across various types of hypnotic suggestion scripts?

3. Do suggestions have specific effects, or is the procedure of hypnosis alone sufficient for positive treatment outcomes?

4. What effect does hypnosis expectancy have?

5. Are the results different depending on what kind of dependent variables are analyzed?
METHODS

Subjects

Subjects were recruited for participation from the community at large. Subjects needed to meet the following minimum criteria to be included in the study: be at least 18 years of age, report a daily consumption of at least 10 cigarettes per day for the last month, and register at least 8 ppm alveolar carbon monoxide (COa) at baseline.

Subjects were recruited through local newspaper advertisements and "word of mouth." Individuals who responded to the ads were given basic information about the study and screened for the appropriateness of their inclusion as a subject (See Appendix A). If appropriate, an intake assessment was scheduled during this initial contact.

Setting

The research setting was either a private practice office located in central downtown Kalamazoo or a therapy room at a local community mental health agency. Locations were determined based upon convenience to the subjects. Each setting had available a comfortable easy chair for the subject. Each location offered a quiet setting with sound attenuation commensurate with a typical therapy room, and lighting at a comfortable level.
Experimental Design

This study employed a group comparison experimental design. Consecutive clinical trials were used to randomly assign subjects to treatment groups such that an equal number of subjects received (a) direct suggestions, (b) a reframe of the problem, or (c) hypnosis with suggestions not specifically related to smoking cessation. However, a complete randomization was not possible due to time constraints. When a treatment group was full, but a subject qualified for it by random assignment, that subject was then assigned to the next open treatment group. For example, if the subject was randomly assigned to an already full group for direct suggestions, that subject was instead placed into the next open group, such as reframe suggestions. It is anticipated that there can be no way that this deviation from randomization procedure could bias the results in any systematic way. The experimenter was blind to the TRS score of each subject throughout the experiment.

A post hoc analysis was performed on the three subscales of the Therapeutic Reactance Scale (Verbal, Behavioral, and Total) and also on responses to the hypnosis believability question to compare them with effectiveness measures of the various types of treatment. Due to an error in printing, it was not possible to analyze results of the responses to the hypnosis expectancy question answered by subjects prior to treatment.
Independent Variable

The independent variables employed in this study consisted of the three different sets of suggestions respective to each group. All subjects, regardless of their group assignments, received the same three trance inductions in the same order in this single session approach. These inductions consisted of a standard eye fixation, Chiasson's method, and eye roll with arm levitation (See Appendices G, H, and I respectively). Subjects who were assigned to receive direct suggestions to stop smoking received the suggestions contained in the script in Appendix D (See Appendix D). Subjects who received suggestions that offered a reframe of the problem received the suggestions contained in the script in Appendix E (See Appendix E). Subjects who experienced hypnosis with suggestions not specifically related to smoking cessation received the script contained in Appendix F (See Appendix F). After trance induction, each set of suggestions was read to the subject to ensure the integrity of the independent variable across subjects. A cassette tape recorder was used to record individual sessions to later ascertain reliability in the administration of the various scripts. Two independent observers listened to a random sample of the taped sessions and rated the accuracy of the delivery of the suggestion scripts.

Scores on the three scales of the Therapeutic Reactance Scale and responses to the hypnosis believability question were cross referenced to effectiveness measures of the various types of treatment.
Dependent Variable

The primary dependent variable for this study was self reported abstinence from cigarette smoking. Four categories of this dependent variable were measured: Quit, Slip, Reduced, and Never Quit. These categories are similar to Abstain, Slip, Relapse, and Never Quit used by Marlatt, Curry, & Gordon (1988). Other dependent variables were the level of alveolar carbon monoxide, reported number of hours since the last cigarette, and reported number of cigarettes smoked in the last 24 hours.

Quit included subjects who self reported not smoking any cigarettes since the previous self report and received a COa level of less than or equal to 8 ppm (Burling, Bigelow, Robinson, & Mead, 1991).

Slip included subjects who self reported smoking no more than two cigarettes since the last self report and obtained a COa level of less than or equal to 8ppm, unless the slip was the day of the COa assessment.

Reduced included subjects who self reported not smoking for a period of at least 24 hours sometime after treatment but returned to smoking levels greater than that of Slippers or who obtained COa levels greater than 8 ppm.

Never Quit was those subjects who self reported not being smoke free for any 24 hour period and obtained COa levels greater than 8ppm.

Self reports of smoking were obtained on the Intake Questionnaire (See Appendix B) and the Follow Up Questionnaire (See Appendix C). These questionnaires also
assessed potential exposure to ambient carbon monoxide that may confound COa determinations.

The MiniCO 1000 Breathkit (Catalyst Research, a division of Mine Safety Appliances Company, Owings Mills, Maryland) was used to assess alveolar carbon monoxide (COa) to corroborate self reported smoking before and after treatment (Vogt, Selvin, Widdowson, & Hulley, 1977; Hughes, Epstein, Andrasik, Neff, & Thompson, 1982; Henningfield, Stitzer, & Griffiths, 1980). The MiniCO 1000 contains an electrochemical cell and results are displayed through a digital Liquid Crystal Display. The MiniCO is a noninvasive breath sampling device that measures carbon monoxide in the range of 0 to 500 parts per million by volume. An alveolar air sample is taken by having the subject exhale into a sampling balloon. A sample is then diffused into the MiniCO 1000 where carbon monoxide is oxidized to carbon dioxide which produces an electrical current that is transformed into a digital display.

The procedure followed was the one explained in the MiniCO Manual. It required subjects to take a deep breath and hold it for 20 seconds, expel one quarter of the breath into open air, and use the remaining alveolar air to fill the collection balloon. The sample of alveolar air was immediately diffused into the unit to obtain the level of COa. To avoid the potential reactive effects of assessing COa, (King, Scott, & Prue, 1983) subjects were not informed of their COa levels. Subjects were not informed as to what gas is being measured either. Instead, they were told that the device “measures blood gasses relevant to smoking.”
Assessment of COa and self report of smoking rate occurred at the intake/treatment session, one week post treatment, and one month post treatment. For waiting list control subjects, COa levels and self reported smoking rate were obtained at intake, one week, one month/treatment, one week post treatment, and one month post treatment sessions. Longer term follow-up data were not obtained because the focus for this study was upon obtaining immediate behavior change, and not relapse prevention.

Procedures

Individuals who responded to the recruitment notices were given basic information about the study and screened for the appropriateness of inclusion as a subject through telephone contact. The Study Information And Subject Screening Form (Please see Appendix A) was used to give information about the study to people who were interested in becoming participants and also document each person's compliance with minimum criteria for participation. Eligible subjects were scheduled for an intake appointment. A copy of the Informed Consent (See Appendix K) and the brochure, Questions and Answers About Clinical Hypnosis (Wester, 1982) were mailed to each qualifying subject prior to the first appointment.

At the intake appointment, each subject completed the Intake Questionnaire (See Appendix B) that obtained demographic information, smoking history, current smoking patterns, and assessed for possible exposure to carbon monoxide sources other than cigarette smoking. The questions that probed for possible confounds to carbon monoxide
measurements were taken from Ellis (unpublished masters thesis, 1989). Alveolar carbon monoxide (COa) was obtained at this session also.

Also at Intake, each subject completed the Therapeutic Reactance Scale (TRS) which was presented as a personal attitude survey in keeping with the procedures used to obtain its norms (Dowd, Milne, & Wise, 1991). The TRS produced three scores: Verbal, Behavioral, and Total. It had one additional question designed to assess hypnosis expectancy (Holroyd, 1991). However, due to an error in printing, responses to this expectancy question, given prior to treatment, were not appropriate for data analysis.

The TRS Personal Attitude Survey was not scored until all subjects had completed participation in the project. The experimenter did not have access to any of the surveys throughout the course of the experiment. This was to ensure that the experimenter was blind to the reactance treatment condition. To ensure further the integrity of the double blind procedure, after the session the therapist guessed whether the subject was a high or low reactance person. At the completion of the study, the therapist's guess was compared with the subject's actual score to determine whether the therapist somehow recognized the subjects' treatment conditions.

The first session was scheduled to occur as soon as possible following screening and qualifying the subject. At the beginning of the first session, self reported smoking rate and carbon monoxide levels were assessed. The Intake Questionnaire and TRS were completed and each participant (other than waiting list controls) experienced three different trance inductions during this session. The trance inductions were presented in
the following order: Eye fixation, Chiasson's Method, and Eye Roll with Arm Levitation. Each subject received praise for being a good hypnotic subject.

The treatment session differed across groups in that subjects in Treatment 1 received suggestions in hypnosis that were direct suggestions to stop smoking (Crasilneck, 1990; Stanton, 1978; see Appendix D). Subjects in Treatment 2 received suggestions during hypnosis that were designed to reframe the problem from one of "I can't stop smoking" to "Treat your body with respect and protection and thereby promote health" (Spiegel, 1970; see Appendix E). Subjects assigned to Treatment 3 received suggestions not specifically related to smoking cessation (see Appendix F). Each suggestion script was read to the appropriate subject during this session to ensure consistency and delivery of identical suggestions across subjects. After hypnosis, each subject rated the believability of treatment on a Likert type scale contained in the End Of Session Questionnaire (see Appendix J).

The First Follow Up appointment was scheduled to occur one week subsequent to the treatment session. The Follow Up Questionnaire (See Appendix C) and a carbon monoxide level were obtained. This appointment lasted less than 15 minutes. At the end of this follow-up contact an appointment for three weeks later (one month after the treatment session) was scheduled.

At the Second Follow Up (one month after treatment) the subject again filled out a Follow Up Questionnaire, carbon monoxide levels were assessed, and the subject was debriefed.
Control group subjects followed a different time line than the various treatment groups subjects. Like subjects in the treatment groups, each control waiting subject received a phone call screening contact, received the identical mailing, and was scheduled for an Intake appointment as soon as possible. At the Intake appointment, each control waiting subject completed the same questionnaires and had COa assessed, but did not receive hypnosis. A follow-up session (1 week later) was scheduled and the same procedure was followed at this meeting as at the post-hypnosis one week follow-up session described above. At the one month follow-up meeting (3 weeks later), the follow-up procedure was employed and then hypnosis was provided. Control subjects were randomly assigned to treatment groups such that one third received authoritarian/direct suggestions; one third received reframe suggestions; and one third received nonspecific suggestions.

Follow-up appointments for control subjects were identical to the various treatment groups subjects. In other words, appointments were scheduled to occur one week and one month post-treatment and the same data were collected (Follow Up Questionnaire and COa).

To aid the reader, a flow chart of the study and a time line that graphically compares the different time lines followed by treatment subjects and control subjects as they progressed through the study are presented in Appendix M.

All experimental interventions were delivered by the experimenter who has received training in clinical hypnosis through the Association for Clinical Hypnosis and has used hypnosis in clinical practice for approximately five years under the supervision of a
licensed psychologist. The treatment sessions were tape recorded and assessed by independent observers at a later time to determine integrity of the independent variable. Observers were supplied with the relevant suggestions script and rated the degree to which the experimenter delivered suggestions consistent with the script. If a suggestion was delivered that was not on the script, the reliability observers rated the degree to which that particular suggestion was in keeping with the intent of the script.

Data Analysis

The percentage of subjects per treatment condition was used to report overall response to treatment. Percentage was also used to express the agreement of CO\textsubscript{a} levels with self report of smoking status, including sensitivity and specificity. Chi-square tests were used to determine the independence of treatment outcomes. Pearson product moment correlations were used to express the relationship between TRS scores and level of CO\textsubscript{a}, self reported number of hours since the last cigarette, and self reported number of cigarettes smoked within the last 24 hours. Pearson correlations were also used to express the relationship between the experimenter's estimate of the subjects' level of reactance and outcome smoking status. T-tests were used to detect differences between CO\textsubscript{a}, reported number of hours since the last cigarette, reported number of cigarettes smoked within the last 24 hours, TRS scores, experimenter's estimate of reactance, and believability vs. status at First Follow Up and Second Follow Up.
CHAPTER III

RESULTS

A number of research questions are addressed in this chapter. To aid the reader, related questions have been grouped under descriptive headings. Each question is then listed immediately preceding the presentation of its respective results.

Response to Treatment

What Was the Overall Response to Treatment?

Four categories of self report response to treatment were used in this study. They were: Never Quit, Reduced, Slip, and Quit. These categories of the dependent variable were assigned to subjects at the one week post treatment (first) follow-up and at the one month post treatment (second) follow-up. Treatment status was assigned based upon the number of cigarettes subjects reported to have smoked between the previous contact with the therapist and the follow-up appointment. For example, at the second follow-up, status was assigned based on the number of cigarettes subjects reported to have smoked during the three weeks between the first follow-up and the second follow-up.

Response to treatment for the group of subjects as a whole, regardless of treatment group, are presented in Table 1. At the first follow-up, 29 of the 48 subjects reported having Never quit smoking, 13 reported Reduced smoking (reported at least one 24 hour
period without smoking but still smoked more than 2 cigarettes during the follow-up week), 2 subjects reported Slipping (smoked no more than 2 cigarettes during the one week interval between treatment and follow-up), and 4 reported as Quit smoking (no cigarettes during the week).

Table 1

Overall Self-Reported Smoking Status at First Follow Up and Second Follow Up Regardless of Treatment

<table>
<thead>
<tr>
<th>STATUS AT FIRST FOLLOW UP</th>
<th>FREQUENCY ($N$)</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEVER QUIT</td>
<td>29</td>
<td>60.4</td>
</tr>
<tr>
<td>REDUCED</td>
<td>13</td>
<td>27.1</td>
</tr>
<tr>
<td>SLIP</td>
<td>2</td>
<td>4.2</td>
</tr>
<tr>
<td>QUIT</td>
<td>4</td>
<td>8.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STATUS AT SECOND FOLLOW UP</th>
<th>FREQUENCY ($N$)</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEVER QUIT</td>
<td>30</td>
<td>62.5</td>
</tr>
<tr>
<td>REDUCED</td>
<td>16</td>
<td>33.3</td>
</tr>
<tr>
<td>SLIP</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>QUIT</td>
<td>2</td>
<td>4.2</td>
</tr>
</tbody>
</table>

At the second follow-up, 30 subjects reported Never quitting smoking, 2 subjects reported Quitting smoking (no cigarettes smoked during the three week interval), and 16
subjects reported Reducing smoking (had at least one 24 hour period without smoking but reported still smoking more than two cigarettes during the three week interval). No subjects reported Slipping.

In general, approximately 40% of the subjects reported a reduction in smoking sufficient enough to be categorized as Quit, Slipped, or Reduced at either follow-up. At first follow-up, 60.4% had not quit and at second follow-up 62.5% had not quit.

No subject assigned to the waiting list group qualified for Quit, Slip, or Reduced status at any time prior to treatment. In other words, each and every subject in the wait condition maintained Never quit status throughout the waiting period. All self reported changes in smoking status occurred only after treatment.

**Was Status at First Follow-up and Second Follow-up Independent of Treatment?**

Due to the small number of subjects who reported either Quit or Slipped, a chi-square analysis to detect differences among the treatment groups was deemed inappropriate. Thus, Quit, Slip, and Reduced were combined into one group to include all subjects who reported some improvement in smoking reduction and/or cessation. Chi-square tests for independence were significant at the $\alpha=.05$ level at first follow-up. Thus, status at first follow-up was dependent upon treatment.

Table 2 presents the percentage of subjects in each dependent variable status by treatment for the first and second follow-up. In Treatment 1, 56.25% of the subjects reported a reduction in smoking and in Treatment 3, 50% of the subjects reported a
reduction in smoking. However, Treatment 2 (reframe suggestions) was effective in only 12.5% of the subjects. The effectiveness of Treatment 1 and Treatment 3 was greater than that of Treatment 2.

At the second follow-up, Chi-square tests did not reject independence. Thus, dependent variable status was independent of treatment. Treatment 1 maintained its level of efficacy with 56.25% of the subjects reporting a reduction in smoking. The efficacy of Treatment 3 had diminished to 37.5% and in Treatment 2, 18.75% reported improvement.

Table 2

The Percentage of Subjects in each Self Report Dependent Variable Status by Treatment for the First Follow Up and Second Follow Up

<table>
<thead>
<tr>
<th></th>
<th>Tx 1</th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>REPORT AT FIRST FOLLOW UP:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEVER QUIT</td>
<td>43.75</td>
<td>7</td>
<td>87.50</td>
<td>14</td>
<td>50.00</td>
</tr>
<tr>
<td>COMBINED QUIT, SLIP, AND REDUCED</td>
<td>56.25</td>
<td>9</td>
<td>12.50</td>
<td>2</td>
<td>50.00</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REPORT AT SECOND FOLLOW UP:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEVER QUIT</td>
<td>43.75</td>
<td>7</td>
<td>81.25</td>
<td>13</td>
<td>62.50</td>
</tr>
<tr>
<td>COMBINED QUIT, SLIP, AND REDUCED</td>
<td>56.25</td>
<td>9</td>
<td>18.75</td>
<td>3</td>
<td>37.50</td>
</tr>
</tbody>
</table>

(Chi-square: DF=2 Value=7.49 p=.024)

(Chi-square: DF=2 Value=4.80 p=.091)
Did Status at First Follow-up Predict Status at Second Follow-up?

Fifty percent (N=24) of the subjects qualified as Never Quit throughout the study. Sixty-six percent of the subjects (N = 32) maintained the same self reported smoking status between first and second follow-up. Thirty-three percent of the subjects (N=16) reported a change in smoking status between first and second follow-up. Of these 16 subjects, 11 (68.75%) reported an increase in smoking levels sufficient enough to change their dependent variable status. Five subjects improved in their self reported smoking status. All five of these originally had qualified as Never Quit; one qualified as Quit at the second follow-up appointment, and 4 qualified as Reduced.

Table 3 displays the number of subjects per dependent variable category at second follow-up in relation to their respective dependent variable category at first follow-up. As can be seen, of those 29 subjects who Never quit (by self report) at first follow-up, 24 (82.75%) of them maintained their status at second follow-up while 5 (17.24%) improved. Of those 4 subjects who Quit at first follow-up (by self report), none qualified as Never Quit in the interval between first and second follow-up, while 1 (25%) maintained Quit status and 3 (75%) Reduced smoking. Of the 13 subjects who Reduced smoking at first follow-up (by self report), 6 (46.15%) were classified as Never Quit at second follow-up and 7 (53.84%) met criteria for Reduced status. Only 2 subjects were categorized as Slip at first follow-up and each met criteria for categorization as Reduced at second follow-up.
Information similar to Table 3 is presented in Table 4 except that self reported smoking status categories Quit, Slip, and Reduced have been combined into one group. The first row of the table shows that of the 29 subjects who had qualified as Never Quit at the first follow-up, by the second follow-up five (17.24%) had reduced smoking sufficiently enough to change status. The second row shows that for the 19 subjects who had improved at the first follow-up, six (31.57%) returned to Never Quit smoking status by the second follow-up.

Table 3

<table>
<thead>
<tr>
<th>SELF REPORTED SMOKING STATUS AT FIRST FOLLOW UP</th>
<th>SELF REPORTED SMOKING STATUS AT SECOND FOLLOW UP</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>R</td>
</tr>
<tr>
<td>NEVER QUIT</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>REDUCED</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>SLIP</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>QUIT</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 4

Number of Subjects per Dependent Variable Category At Second Follow Up in Relation to Their Respective Dependent Variable Category at First Follow Up. Categories Quit, Slip, and Reduced Have Been Collapsed Into One Group

<table>
<thead>
<tr>
<th>SELF REPORTED SMOKING STATUS AT FIRST FOLLOW UP</th>
<th>SELF REPORTED SMOKING STATUS AT SECOND FOLLOW UP</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEVER QUIT</td>
<td>COMBINED</td>
</tr>
<tr>
<td>NEVER QUIT</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>COMBINED: QUIT, SLIP, AND REDUCED</td>
<td>6</td>
<td>13</td>
</tr>
</tbody>
</table>

Were There Significant Differences Between COa, Number of Cigarettes Reported Smoked in the Last 24 hours, or Number of Hours Reported Since the Last Cigarette at Intake vs. Status at First or Second Follow-up? Did Any of These at First Follow-up Influence Status at Second Follow-up?

T-tests were used to detect significant differences among COa, the number of self-reported cigarettes smoked in the last 24 hours, and the number of hours elapsed since self-reported last cigarette at Intake versus reported smoking status (Never quit and the Combined group consisting of Quit, Slip, and Reduced) at first or second follow-up (see Table 5).
### Table 5

T-Test Results of COa, Number of Cigarettes Reported Smoked in the Last 24 Hours, and Number of Hours Reported Since Last Cigarette at Intake vs. Status at First Follow Up and Second Follow Up

<table>
<thead>
<tr>
<th>INTAKE</th>
<th>FIRST FOLLOW UP</th>
<th>SECOND FOLLOW UP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>DF</td>
</tr>
<tr>
<td>COa</td>
<td>0.96</td>
<td>46.0</td>
</tr>
<tr>
<td>SELF REPORTED # HOURS SINCE LAST CIG.</td>
<td>-1.08</td>
<td>17.3</td>
</tr>
<tr>
<td>SELF REPORTED # CIGS. IN LAST 24 HOURS</td>
<td>-0.72</td>
<td>46.0</td>
</tr>
</tbody>
</table>

### Table 6

T-Test Results of COa, Number of Cigarettes Reported Smoked in the Last 24 Hours, and Number of Hours Reported Since Last Cigarette at First Follow Up vs. Status at Second Follow Up

<table>
<thead>
<tr>
<th>FIRST FOLLOW UP</th>
<th>t</th>
<th>DF</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>COa</td>
<td>0.708</td>
<td>19.0</td>
<td>0.487</td>
</tr>
<tr>
<td>SELF REPORTED # HOURS SINCE LAST CIG.</td>
<td>-0.989</td>
<td>11.0</td>
<td>0.343</td>
</tr>
<tr>
<td>SELF REPORTED # CIGS. IN LAST 24 HOURS</td>
<td>1.603</td>
<td>46.0</td>
<td>0.115</td>
</tr>
</tbody>
</table>

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TRS Scores and Response to Treatment

What Were the Means, Standard Deviations, and Ranges for the TRS Verbal, Behavioral, and Total Subscales?

The Therapeutic Reactance Scale (TRS) was administered to each of the 48 subjects and yielded three scores: Verbal, Behavioral, and Total. Table 7 provides normative data for the TRS obtained in this study. The Verbal scale resulted in a Mean 31.65, Standard Deviation 2.972, with a range from 25 to 37. The Behavioral scale resulted in a Mean 36.02, Standard Deviation 4.870, and a range 24 to 44. The Total score resulted in a Mean of 67.645, Standard Deviation 6.121, and a range from 54 to 81. The Total score is similar to that obtained by Dowd, Milne, and Wise (1991) for 211 undergraduate university students: Total Mean = 66.68 and SD = 6.59.

Table 7

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERBAL</td>
<td>48</td>
<td>31.62</td>
<td>2.972</td>
<td>25 to 37</td>
</tr>
<tr>
<td>BEHAVIORAL</td>
<td>48</td>
<td>36.02</td>
<td>4.870</td>
<td>24 to 44</td>
</tr>
<tr>
<td>TOTAL</td>
<td>48</td>
<td>67.64</td>
<td>6.121</td>
<td>54 to 81</td>
</tr>
</tbody>
</table>

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Was There a Significant Relationship Between TRS Scores and Level of COa, the Number of Hours Reported Since the Last Cigarette, or the Number of Cigarettes Reported Smoked in the Last 24 Hours?

A Pearson product moment correlation analysis was run in which each TRS Verbal, Behavioral, and Total score was compared with the level of COa, the number of hours reported since the last cigarette, and the number of cigarettes reported smoked within the last 24 hours at Intake (see Table 8), First Follow Up (see Table 9), and Second Follow Up (see Table 10). Only one correlation reached significance at the .05 level, which was a positive correlation between the Behavioral subscale and the level of COa at the Second Follow Up ($r=0.47$ $p=0.0314$).

Table 8

Pearson Product Moment Correlations at Intake

<table>
<thead>
<tr>
<th></th>
<th>COa</th>
<th>HOURS SINCE LAST CIG.</th>
<th># OF CIGS. IN LAST 24 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VERBAL</td>
<td>$r$</td>
<td>-0.037</td>
<td>0.050</td>
</tr>
<tr>
<td></td>
<td>$p$</td>
<td>0.797</td>
<td>0.760</td>
</tr>
<tr>
<td></td>
<td>$n$</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td>BEHAVIORAL</td>
<td>$r$</td>
<td>-0.114</td>
<td>-0.031</td>
</tr>
<tr>
<td></td>
<td>$p$</td>
<td>0.437</td>
<td>0.850</td>
</tr>
<tr>
<td></td>
<td>$n$</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$r$</td>
<td>-0.109</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>$p$</td>
<td>0.458</td>
<td>0.990</td>
</tr>
<tr>
<td></td>
<td>$n$</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>COa</td>
<td>HOURS SINCE LAST CIG.</td>
<td># OF CIGS. IN LAST 24 HOURS</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----</td>
<td>-----------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td><strong>VERBAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$r$</td>
<td>0.083</td>
<td>0.301</td>
<td>0.079</td>
</tr>
<tr>
<td>$p$</td>
<td>0.664</td>
<td>0.134</td>
<td>0.590</td>
</tr>
<tr>
<td>$n$</td>
<td>33</td>
<td>26</td>
<td>48</td>
</tr>
<tr>
<td><strong>BEHAVIORAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$r$</td>
<td>-0.018</td>
<td>-0.042</td>
<td>0.029</td>
</tr>
<tr>
<td>$p$</td>
<td>0.916</td>
<td>0.835</td>
<td>0.842</td>
</tr>
<tr>
<td>$n$</td>
<td>33</td>
<td>26</td>
<td>48</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$r$</td>
<td>0.025</td>
<td>0.106</td>
<td>0.062</td>
</tr>
<tr>
<td>$p$</td>
<td>0.890</td>
<td>0.603</td>
<td>0.675</td>
</tr>
<tr>
<td>$n$</td>
<td>33</td>
<td>26</td>
<td>48</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>COa</th>
<th>HOURS SINCE LAST CIG.</th>
<th># OF CIGS. IN LAST 24 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VERBAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$r$</td>
<td>0.165</td>
<td>0.144</td>
<td>0.025</td>
</tr>
<tr>
<td>$p$</td>
<td>0.472</td>
<td>0.554</td>
<td>0.864</td>
</tr>
<tr>
<td>$n$</td>
<td>21</td>
<td>19</td>
<td>48</td>
</tr>
<tr>
<td><strong>BEHAVIORAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$r$</td>
<td>0.470*</td>
<td>-0.155</td>
<td>0.079</td>
</tr>
<tr>
<td>$p$</td>
<td>0.031</td>
<td>0.526</td>
<td>0.592</td>
</tr>
<tr>
<td>$n$</td>
<td>21</td>
<td>19</td>
<td>48</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$r$</td>
<td>0.409</td>
<td>-0.040</td>
<td>0.075</td>
</tr>
<tr>
<td>$p$</td>
<td>0.065</td>
<td>0.869</td>
<td>0.611</td>
</tr>
<tr>
<td>$n$</td>
<td>21</td>
<td>19</td>
<td>48</td>
</tr>
</tbody>
</table>

*Significant at the .05 level.
A repeated measures analysis of variance detected a difference in COa level as a function of time elapsed rather than by treatment condition. The pairwise differences in mean COa levels at Intake versus first follow-up and second follow-up are presented in Table 11. These Post Hoc tests showed a significant difference between Intake and first follow-up and Intake and second follow-up in which COa decreased after Intake. No significant difference in COa mean levels was detected between first and second follow-up.

Table 11

<table>
<thead>
<tr>
<th>TIME COMPARISON</th>
<th>DIFFERENCE BETWEEN MEANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTAKE - FIRST FOLLOW UP</td>
<td>16.687*</td>
</tr>
<tr>
<td>INTAKE - SECOND FOLLOW UP</td>
<td>15.878*</td>
</tr>
<tr>
<td>FIRST FOLLOW UP - SECOND FOLLOW UP</td>
<td>-0.810</td>
</tr>
</tbody>
</table>

* significant at the .05 level

Were There Significant Differences in TRS Verbal, Behavioral, or Total Scores vs. Status at First or Second Follow-up?

Due to the small number of subjects who qualified for Quit or Slip status, T-tests were run for Never quit and the combined group consisting of subjects who qualified for Quit, Slip, or Reduced status to detect any significant differences between TRS subscale
scores and smoking status at first or second follow-up. All relations failed to reach statistical significance at the .05 level (see Table 12).

Table 12

T-Test Results for TRS Scores vs. Never Quit and the Combined Group (Quit, Slip, and Reduced) Status at First and Second Follow Up

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>DF</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRST FOLLOW UP</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VERBAL</td>
<td>1.391</td>
<td>46.0</td>
<td>0.170</td>
</tr>
<tr>
<td>BEHAVIORAL</td>
<td>-0.706</td>
<td>45.7</td>
<td>0.483</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.170</td>
<td>46.0</td>
<td>0.865</td>
</tr>
<tr>
<td><strong>SECOND FOLLOW UP</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VERBAL</td>
<td>1.340</td>
<td>46.0</td>
<td>0.186</td>
</tr>
<tr>
<td>BEHAVIORAL</td>
<td>0.692</td>
<td>46.0</td>
<td>0.492</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1.205</td>
<td>46.0</td>
<td>0.234</td>
</tr>
</tbody>
</table>

Were There Differences Between the Experimenter’s Estimate of Reactance vs. Status, COa. Number of Cigarettes Reported Smoked in the Last 24 Hours, Number of Hours Reported Since the Last Cigarette, or TRS Scores at First or Second Follow-up?

All t-test results were nonsignificant at the .05 level except for the Verbal subscale (see Table 13).
Table 13

T-Test Results for Subjects Estimated by the Experimenter to be High or Low Overall Reactance vs. COa, Number of Hours Reported Since Last Cigarette, Number of Cigarettes Reported Smoked in the Last 24 Hours, and TRS Scores

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>DF</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTAKE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COa</td>
<td>1.451</td>
<td>46.0</td>
<td>0.153</td>
</tr>
<tr>
<td>SELF REPORTED HOURS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SINCE LAST CIG.</td>
<td>1.043</td>
<td>21.6</td>
<td>0.308</td>
</tr>
<tr>
<td>SELF REPORTED # OF CIGS IN LAST 24 HOURS</td>
<td>0.047</td>
<td>46.0</td>
<td>0.962</td>
</tr>
<tr>
<td><strong>FIRST FOLLOW UP</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COa</td>
<td>1.773</td>
<td>31.0</td>
<td>0.086</td>
</tr>
<tr>
<td>SELF REPORTED HOURS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SINCE LAST CIG.</td>
<td>-0.782</td>
<td>12.3</td>
<td>0.448</td>
</tr>
<tr>
<td>SELF REPORTED # OF CIGS IN LAST 24 HOURS</td>
<td>0.773</td>
<td>46.0</td>
<td>0.443</td>
</tr>
<tr>
<td><strong>SECOND FOLLOW UP</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COa</td>
<td>0.985</td>
<td>19.0</td>
<td>0.336</td>
</tr>
<tr>
<td>SELF REPORTED HOURS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SINCE LAST CIG.</td>
<td>-0.585</td>
<td>17.0</td>
<td>0.566</td>
</tr>
<tr>
<td>SELF REPORTED # OF CIGS IN LAST 24 HOURS</td>
<td>-0.337</td>
<td>46.0</td>
<td>0.737</td>
</tr>
<tr>
<td><strong>TRS SCORES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VERBAL</td>
<td>2.849</td>
<td>46.0</td>
<td>0.006*</td>
</tr>
<tr>
<td>BEHAVIORAL</td>
<td>-0.665</td>
<td>43.6</td>
<td>0.509</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.784</td>
<td>46.0</td>
<td>0.437</td>
</tr>
</tbody>
</table>

* Significant at the .05 level.
Was Outcome Status Influenced by the Experimenter’s Estimate of the Level of Reactance?

The group of subjects estimated by the therapist to be high in reactance obtained a mean Verbal score of 32.6. The group of subjects estimated by the therapist to be low in Reactance obtained a mean Verbal score of 30.3 (t=2.84, df=46, p=0.006). A Kappa was run to determine if status at either follow-up was independent of the experimenter’s estimate of Verbal Reactance. Overall outcome status at each follow-up was independent of the experimenter’s estimate (see Table 14) indicating that the Experimenter’s estimate did not influence outcome status.

Table 14
Experimenter’s Estimate of Reactance vs. Reported Smoking Status at First Follow up and Second Follow Up

<table>
<thead>
<tr>
<th>EXPERIMENTER’S ESTIMATE</th>
<th>NEVER QUIT</th>
<th>COMBINED QUIT, SLIP, REDUCED</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST FOLLOW UP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIGH</td>
<td>n</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>58.6</td>
</tr>
<tr>
<td>LOW</td>
<td>n</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>41.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SECOND FOLLOW UP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIGH</td>
<td>n</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>56.7</td>
</tr>
<tr>
<td>LOW</td>
<td>n</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>43.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Believability of Treatment

Was Believability Independent of Status? Were There Significant Differences Between Level of COa, the Number of Hours Reported Since the Last cigarette, or the Number of Cigarettes Reported Smoked in the Last 24 Hours at First or Second Follow-up Based on Believability Status?

An indicator of the subjects' belief in the treatment's efficacy (client expectancy) was administered as a 5 point Likert type scale at the end of the treatment session. Table 15 presents the number of subjects by treatment who chose each rating on the Likert type scale. Only one subject chose 1 (1 = "The hypnosis I just received will work automatically, without any effort on my part") and only one subject chose 5 (5 = "The hypnosis I just received will have no effect"). Only four subjects chose 4 on the scale. The majority of subjects (N = 30) chose 3, the middle of the scale. Ten subjects chose 2. Due to an error in administering the protocol, two subjects did not rate believability.

Due to the small number of subjects who chose 1, 4, and 5, t-tests were run only for scale items 2 and 3. T-tests were performed to detect any significant differences between Believability group and level of COa, time reported since last cigarette, and number of cigarettes reported smoked in the last 24 hours. Tests at intake, first, and second follow were all nonsignificant at the .05 level. Table 16 presents the t-test results.
### Table 15
The Number of Subjects by Treatment Condition per Rating on the Believability Scale

<table>
<thead>
<tr>
<th>BELIEVABILITY SCALE NUMBER</th>
<th>Tx 1 (n)</th>
<th>Tx 2 (n)</th>
<th>Tx 3 (n)</th>
<th>TOTAL (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>15</strong></td>
<td><strong>15</strong></td>
<td><strong>16</strong></td>
<td><strong>46</strong></td>
</tr>
</tbody>
</table>

**Drop Out Rate**

**Was There a Differential Drop Out Rate in the Treatment Groups That is Significant?**

No subjects in treatment groups 1, 2, or 3 dropped out of the study. If a subject failed to arrive for either follow-up appointment, the experimenter called the subject at home and obtained a telephone self report from the subject. If the subject reported not smoking, the subject was required to come in for a face to face meeting to obtain a COa level. However, three subjects (25%) who were assigned to the waiting list group dropped out before receiving treatment. In a telephone contact with the experimenter...
each asked to be released from participation in the study. New subjects were recruited to take each drop out's place as the attrition occurred.

Table 16

T-Test Results of Believability Scores vs. COa, Number of Hours Reported Since the Last Cigarette, and Number of Cigarettes Reported Smoked in the Last 24 Hours for Intake, First Follow Up, and Second Follow Up

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>DF</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTAKE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COa</td>
<td>1.756</td>
<td>38.0</td>
<td>0.087</td>
</tr>
<tr>
<td>SELF REPORTED HOURS</td>
<td>-0.106</td>
<td>31.0</td>
<td>0.915</td>
</tr>
<tr>
<td>SINCE LAST CIG.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELF REPORTED # OF CIGS IN LAST 24 HOURS</td>
<td>0.855</td>
<td>38.0</td>
<td>0.397</td>
</tr>
<tr>
<td><strong>FIRST FOLLOW UP</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COa</td>
<td>-1.103</td>
<td>25.0</td>
<td>0.280</td>
</tr>
<tr>
<td>SELF REPORTED HOURS</td>
<td>0.047</td>
<td>19.0</td>
<td>0.963</td>
</tr>
<tr>
<td>SINCE LAST CIG.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELF REPORTED # OF CIGS IN LAST 24 HOURS</td>
<td>0.494</td>
<td>38.0</td>
<td>0.623</td>
</tr>
<tr>
<td><strong>SECOND FOLLOW UP</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COa</td>
<td>-0.732</td>
<td>16.0</td>
<td>0.474</td>
</tr>
<tr>
<td>SELF REPORTED HOURS</td>
<td>0.987</td>
<td>5.4</td>
<td>0.365</td>
</tr>
<tr>
<td>SINCE LAST CIG.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELF REPORTED # OF CIGS IN LAST 24 HOURS</td>
<td>-1.355</td>
<td>38.0</td>
<td>0.183</td>
</tr>
</tbody>
</table>

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Did a Certain Level of COa Detect Self Reported Smokers From Self Reported Nonsmokers?

Other investigators, (Hughes, et al., 1982) have found that a level of COa greater than, or equal to, 8 ppm maximized the rate of agreement between self reported smoking status and COa measurement. Hughes et al. (1982) found that self report and COa determinations agreed in 88% of their cases (N=167) with a false positive rate of 12.0% and a false negative rate of 12.5%.

The current study obtained similar results with COa 8 ppm as the criterion in comparison with self reported smoking rates for the 24 hours immediately preceding the COa assessment. At first follow-up 33 subjects were assessed for COa. Overall agreement was 84.85% with a false positive rate of 6.06% and false negative rate of 9.09%. Sensitivity, or COa detection of self reported smoking subjects (n=24), was 87.50%. Twenty-one of 24 self reported smokers obtained COa levels greater than 8 ppm. Specificity, or COa detection of self reported nonsmoking subjects (n=9), was 77.78%. Seven of nine self reported nonsmokers obtained COa levels of 8 ppm or less.

Only 21 subjects were assessed for COa at second follow-up and results were similar to those at first follow-up. Overall agreement was 90.47%. The false positive and false negative rates were each 4.76%. Sensitivity was 94.44%. Seventeen of 18 self reported smokers obtained COa levels greater than 8 ppm. Specificity was 66.67%. Two of 3 self reported nonsmokers obtained COa levels of 8 ppm or less.
Overall, there were four false negatives (COa ≤ 8 ppm and self-reported smoking within the last 24 hours). The level of COa, the number of hours since last cigarette, and the number of cigarettes within the last 24 hours are presented in Table 17 for the false negatives.

For all three instances of false positives, the level of COa was 9 ppm. Table 18 presents data on the instances of false positives.

Table 17

<table>
<thead>
<tr>
<th>NAME CODE</th>
<th>COa</th>
<th>HOURS SINCE LAST CIG.</th>
<th># CIGS. IN LAST 24 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MU5653</td>
<td>5</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>(1st FOLLOW UP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2ND FOLLOW UP)</td>
<td>7</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>CO7527</td>
<td>5</td>
<td>8.5</td>
<td>2</td>
</tr>
<tr>
<td>CH9015</td>
<td>8</td>
<td>4</td>
<td>30</td>
</tr>
</tbody>
</table>

Note: Subject MU5653 Appears At Both First And Second Follow Up.

There was a moderate correlation between COa and the number of hours reported since last cigarette. There was also a moderate correlation between COa and the number of cigarettes reported smoked within the last 24 hours. Table 19 presents the Pearson product moment correlations. In general, the level of COa increased as the...
reported number of cigarettes smoked increased and the level of COa decreased as the
reported time since the last cigarette increased.

Table 18
The Level of COa, Number of Hours Reported Since the Last Cigarette, and Number of
Cigarettes Reported Smoked Within the Last 24 Hours for False Positive Subjects

<table>
<thead>
<tr>
<th>NAME CODE</th>
<th>COa</th>
<th>HOURS SINCE LAST CIG.</th>
<th># CIGS. IN LAST 24 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>JO4288</td>
<td>9</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>(1st FOLLOW UP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2nd FOLLOW UP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE6805</td>
<td>9</td>
<td>24</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Subject JO4288 Appears At Both First And Second Follow Up.

Table 19
Pearson Product Moment Correlations for COa vs. Number of Hours Reported Since
Last Cigarette and Reported Number of Cigarettes Within the Last 24 Hours

<table>
<thead>
<tr>
<th></th>
<th>INTAKE</th>
<th>FIRST FOLLOW UP</th>
<th>SECOND FOLLOW UP</th>
</tr>
</thead>
<tbody>
<tr>
<td>COa vs. REPORTED</td>
<td>Nonsignificant</td>
<td>-0.67</td>
<td>-0.62</td>
</tr>
<tr>
<td>HOURS SINCE LAST CIG.</td>
<td>$p=.0002$</td>
<td></td>
<td>$p=.0045$</td>
</tr>
<tr>
<td>COa vs. REPORTED</td>
<td>Nonsignificant</td>
<td>0.68</td>
<td>0.63</td>
</tr>
<tr>
<td>NUMBER OF CIGS.</td>
<td>$p=.0001$</td>
<td></td>
<td>$p=.0021$</td>
</tr>
<tr>
<td>IN LAST 24 HOURS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Integrity of the Independent Variable

Two independent observers listened to a randomly selected sample of the tape recordings of the sessions to assess the experimenter's accuracy and consistency in delivering the scripted suggestions. The raters were provided with a copy of each suggestion script to read as they listened to the tapes. They scored any deviation from the script the experimenter made and determined if the deviation changed the meaning of the suggestion in any way. The number of deviations were divided by the number of words in each respective script to obtain percent accuracy. Overall mean percent accuracy was 99.98% (range = 99.91% to 100%). Ten percent of the sessions were scored instead of the customary 30% due to such high reliability scores.

No deviation was determined to have changed the meaning of any suggestion, or sentence, in any of the scripts. The most common deviation scored was the joining of two words into a contraction by the experimenter. For example, instead of saying "you are," the experimenter said, "you're." This type of deviation accounted for 73.87% of the deviations (82 of 111 total combined deviations scored). Other deviations consisted of not saying a word such as not saying "may" in "...there may have been times..." and word endings were occasionally dropped such as "look in" instead of "looked into."

Inter-rater agreement was calculated by dividing the total number of agreements by the total number of agreements plus disagreements to obtain percent agreement. An inter-rater agreement of 73.43% was obtained (47/47+17). All but two of the disagreements occurred in detecting a contraction formed by the experimenter. In
general, if the deviation consisted of a substituted, missed, or mispronounced word the two raters agreed. There were 19 deviations other than contractions and the inter-rater agreement for these 19 deviations was 89.47% (17/17+2). Again, none of these deviations were rated as changing the meaning of the suggestion, or sentence.

To detect differences in pacing of the suggestions and length of time each subject was exposed to suggestions, the length of time to deliver each complete suggestion script for each treatment condition was also assessed. Twenty five percent of the sessions for each treatment condition (n=4) were randomly selected and timed with a digital stopwatch. The mean length of time for Treatment 1 was 9.54 minutes; for Treatment 2, 10.00 minutes; and for Treatment 3, 9.76 minutes. The script for Treatment 1 consisted of 1202 words, Treatment 2 had 1205 words, and Treatment 3 used 1174 words. Thus, each subject spent approximately the same amount of time receiving suggestions. Total time in hypnosis, consisting of the induction plus suggestions, was not recorded.
CHAPTER IV

DISCUSSION

In general, response to treatment was not all that robust in regards to smoking cessation. Self reported Quitters accounted for only 8.3% of the subjects at First Follow Up and 4.2% at Second Follow Up. However, approximately 40% of the subjects showed some improvement in smoking by self report at each of the follow-up points. In contrast, the efficacy of behavioral therapy approaches has ranged from approximately 20% to 85%. Pharmacological approaches have generally been accompanied by behavioral treatment and have ranged from 11% to 90% efficacy. Other hypnotherapy approaches have reported abstinence rates ranging from 4% to 88% at follow-up points from three to 24 months after treatment. All of the behavioral, pharmacological, and most of the hypnotherapy studies used multiple sessions with each subject. Behavioral reports cited anywhere from six to 16 sessions. Pharmacological reports that included behavioral treatment cited a similar range; from six to 15 sessions. Similarly, a pharmacological/no behavior treatment study of the transdermal nicotine patch used 16 sessions. Hypnotherapy studies are the only reports that cite single session treatments. The number of sessions for hypnotherapy ranged from one to seven.
All of the hypnotherapy studies, except one, relied on self report as the dependent variable. One study (Williams & Hall, 1988) used self monitoring. Only the study by Hyman et al. (1986) used a physiological measure (serum thiocyanate) to corroborate self monitoring reports.

Of the single session hypnosis studies, only the Williams & Hall (1988) study used self monitoring whereas the rest used retrospective self report. Some retrospective accounts spanned periods as long as six months (Spiegel, 1970). None of them used any biochemical measures to corroborate self report. Results from the current study may be less than the 20% to 45% range presented by other single session hypnosis studies due to the rigor with which the dependent variable was measured. Although no subject was informed of the purpose of the MiniCO 1000 Breathkit, most subjects commented during the debriefing session that they assumed the breath test was a validity check on their self report. Evans, Hansen, & Mittelmark (1977) found that self reports are likely to be more accurate when the subjects know, or think, their reports will be checked by biochemical methods. Thus, subjects in the current study may have been less likely to discount smoking an occasional cigarette during the follow-up interval and included it in their self report.

In addition to the rigor in which the dependent variable was measured, the definition of abstinence was quite narrow: no cigarettes smoked during the follow-up interval. Even the criteria for the Slip category (often referred to as relapse in the literature) was quite strict; no more than two cigarettes during the entire follow-up period.
This study obtained differential treatment outcomes across various types of suggestion scripts, but not in a direction that one would predict. At First Follow Up, Treatment 1 (direct suggestions) and Treatment 3 (nonspecific suggestions) were more effective than reframe suggestion (Treatment 2). Treatment 2 used suggestions similar to those used by Spiegel (1970) who reported a 20% self-reported abstinence rate at six months obtained on a questionnaire mailed to subjects. In the current study, 12.5% of Treatment 2 subjects reported an improvement in their smoking status (one Quit and one Reduced). The difference between this result and Spiegel's (1970) result could be a function of the rigor of dependent variable definition and measurement and/or the small number of subjects (n=16) relative to Spiegel's large number of subjects who responded to his questionnaire (n=242). With a loosely defined dependent variable, subjects may self-report that they quit even if they occasionally smoked cigarettes during the follow-up interval.

This study found some support for nonspecific treatment effects of hypnosis. Treatment 1 and Treatment 3 were essentially equivalent in effectiveness at the First Follow Up. The suggestions offered in Treatment 3 were designed to be generic in nature and specifically related to smoking cessation. Suggestions in Treatment 1 and Treatment 2 specifically mention smoking. Although tempting, one cannot conclude that simply the experience of receiving hypnosis alone is sufficient for a behavior change such as reducing cigarette consumption. In order to do so, one would need to see equivalent treatment effects across the various suggestion scripts (assuming that none of the scripts produced specifically detrimental effects). It appears however,
that general "ego-enhancing suggestions" (Stanton, 1978) alone may have specific effects.

Descriptive data obtained on subjects in the study on the Therapeutic Reactance Scale (TRS) was similar to that obtained by Dowd, Milne, & Wise (1991) in regards to the TRS Total score. The results were also similar to those obtained by Graybar et al. (1989) for Total, Behavioral, and Verbal scores.

The current study did not provide support for the treatment utility of any of the TRS scores. No significant differences were found between TRS scores and any of the outcome smoking status variables. There was a significant difference in mean Verbal scores between those subjects estimated by the experimenter to be high or low in reactance. However, there was no differential response to treatment for these two groups. This indicates that the experimenter's expectancy of treatment effects did not bias the outcome. Except for a moderate correlation between Behavioral reactance scores and the level of COa at the Second Follow Up, no significant relationships were noted between TRS scores and COa, the number of hours reported since the last cigarette, or the reported number of cigarettes smoked in the last 24 hours. This lack of significant differences and/or relationships might be the result of a restriction in range of obtained TRS scores. In other words, there may not have been enough subjects scoring sufficiently high or low to detect differences or establish stronger correlations. It could be the case that the TRS is sensitive to outcomes, but only for those subjects who score at extreme ends of one or more of its scales.
The lack of treatment effect sensitivity might also be attributed to the fact that only a small number of subjects qualified for either Quit or Slip status. It may be the case that there is not much difference between those who qualified for Reduced status and those who qualified for Never Quit. To have included Reduced subjects with Quit and Slipped subjects may have been generous. In other words, it would be unfair to criticize the TRS for a lack of treatment effect sensitivity in the face of a small number of positive treatment results. Unfortunately, the results of the present study neither support nor refute any claims that can be made about the treatment assessment utility of the Therapeutic Reactance Scale. Equally unfortunate, little data exist to suggest the use of verbal self report to assess treatment validity.

Although it may have been "generous" to include Reduced status subjects in with Quit and Slip status subjects, meeting the criteria for Reduced may be of clinical significance. Questions that probed for a day to day self analysis of smoking behavior during the follow-up interval were not part of the protocol. However, many subjects volunteered information. For those who did, interview notes were made on their respective Follow Up Questionnaire forms. Of the 13 Reduced status subjects at First Follow Up, eight reported more detailed information than the questionnaire required. Each of these eight subjects experienced at least one 24 hour period of self reported smoking abstinence in order to qualify for Reduced status. Each of these eight reported that the 24 hours of abstinence occurred immediately following hypnosis. Only one subject reported meeting the minimum criterion of 24 hours. Two reported two consecutive days of not smoking. Two subjects reported three
consecutive days of not smoking. One subject reported abstinence for four consecutive days. Two subjects reported being smoke free for five consecutive days and one subject reported that he had smoked only two cigarettes plus took "two puffs off a friend's cigarette." These periods of self reported abstinence may be commensurate with the rate that smokers "spontaneously" quit without treatment. Hypnosis may have functioned as a setting event (ritual event) similar to New Year's eve in which the ritual of making a resolution and following it for a short time is practiced. Either way, these self reported reductions in smoking are important changes in behavior immediately following contact with the therapist. Many times the task of therapy is to expand upon small initial changes in behavior. Hypnotherapy that uses more than one session, with the second session scheduled to occur one or two days after the first session, may improve treatment results. This is in keeping with Holroyd's (1980) observation that hypnosis for smoking cessation is most effective when there are several hours of treatment.

Immediately following hypnosis, subjects rated the Believability of the power of the treatment. Unlike the Holroyd (1991) study, no significant relationships emerged in this study between the subjects' ratings and any of the dependent variables. This may be the result of a low self reported smoking improvement rate, a narrow range of responses obtained on the scale, or a narrow (1-5) band in which to reply. A 10 point Likert type scale may have obtained a wider spread in responses and thus been more sensitive to individual differences if they existed. Holroyd (1991) noted that the correlation obtained in her study was weak ($r=-.25$, $df=82$, $p<.02$) in
which abstainers responded more in the direction of "Hypnosis will work automatically, without any effort on my part," prior to receiving hypnosis.

The current study examined the treatment utility of the TRS in relation to single session hypnosis for smoking cessation using three distinctly different suggestion scripts. In general, it appears that single session hypnosis can promote a self reported reduction in cigarette smoking. However, the design of this study may have precluded obtaining definitive answers regarding the treatment utility of the TRS. Due to logistics, a consecutive clinical trials procedure was followed and a post hoc analysis was performed. Given enough time and a readily available supply of subjects, an a priori group comparison in the form of an "obtained differences/two or more treatments" study that assesses whether different types of treatment interact with various types of subjects (Hayes, Nelson, & Jarrett, 1987) would be a more powerful design. The "obtained differences" refers to the differences in the TRS scores. The "two or more treatments" refers to the three types of suggestion scripts. Consecutive clinical trials could be used to assign subjects to treatment groups such that an equal number of high scorers and an equal number of low scorers received the various types of suggestions. This type of design could require many subjects in order to fill the cells with sufficient numbers of high and low scorers. In this type of study the TRS may show treatment utility, however, it may do so only for subjects who score at extreme ends of the scale. Running such a study in the locale of the current study would be expected to take about two to three years.
Appendix A

Subject Information and Subject Screening Form
We are conducting a study about stopping smoking and hypnosis. The study will consist of three to five sessions and may last as long as two months. During the first meeting, an overview of the study will be presented, questionnaires will be completed, an expired air sample will be collected by a device similar to a breathalyzer to analyze blood gases relevant to smoking, and depending on the waiting list, hypnosis will be provided. This first meeting may last as long as a 1 1/2 hours. The second meeting is one week later and you will simply come in long enough to fill out a short questionnaire and provide a breath sample. The third meeting will occur 3 weeks later and it will be the same as the second meeting unless you have not received hypnosis yet. Then the third meeting will be your individual hypnosis session and you will need to return 1 week later and 3 weeks after that. In order to be a participant in this study you must be at least 18 years of age along with meeting some other criteria.

If you are interested I would like to take some information from you now. Any information you give me will remain strictly confidential and be used only for the purposes of this study.
SUBJECT SCREENING FORM

DATE: __________

NAME CODE: ________________________________

AGE: ___________ SEX: __________

NUMBER OF CIGARETTES SMOKED PER DAY: ___________

HOW MANY CIGARETTES HAVE YOU SMOKED IN THE LAST 24 HOURS? ______

HAVE YOU SMOKED THIS MUCH FOR AT LEAST THE LAST MONTH? ____

HOW MANY YEARS HAVE YOU SMOKED? ________
INTAKE QUESTIONNAIRE

1. Name Code ___________________________ Date _____

2. Date of Birth Age 3. Sex: M F

4. Race: Black Asian Caucasian (Hispanic)
   Caucasian (Non-Hispanic) Native American
   Other

5. Occupation:

6. Marital Status: Single Married Divorced

7. What brand of cigarettes do you smoke?

8. I smoke: Regulars 100's 120's Other

9. I smoke: Filtered Unfiltered

10. I smoke: Mentholated Nonmentholated

11. How old were you when you began smoking? _______

12. What is the maximum number of cigarettes per day you have ever smoked? _______

13. How many cigarettes per day are you currently smoking?_____

14. How many cigarettes have you smoked in the last 24 hours?_____

15. How many times have you tried to quit smoking?_____

16. When was the last time you quit?

17. List how long you went without a cigarette for each time you have quit?
   1.
   2.
   3.
18. Are you now, or have you ever used nicotine chewing gum or a nicotine skin patch? 
   Yes    No
   If yes, circle the ones that apply:
   1. I am using it now
   2. I have used it before
   3. I found it helpful
   4. I did not find it helpful

19. Do you use tobacco in any other form?    Yes    No
   If yes, circle the appropriate response, and indicate how much per day:
   A. Chewing (smokeless) tobacco_________
   B. Pipe________________________________
   C. Cigar_______________________________
   D. Other________________________________

20. Are there other smokers in your household?: Yes    No
   If yes, list their age and relation to you:
   _______________________________________
   _______________________________________
   _______________________________________
   _______________________________________ 

21. Do you have friends who smoke?:    Yes    No
   If yes, how many with whom you speak or see at least weekly?________

22. A) Have you ever borrowed cigarettes from family or others?    Yes    No
    B) Would you ever borrow cigarettes from family or others?    Yes    No
23. Are you exposed to smoke at work/school?: Yes No
   If yes, what percent of your time each work or school day
   is spent in contact with smoke from other's cigarettes,
   pipes, cigars, etc.?:
      A. Less than 25%
      B. 25-50%
      C. 50-75%
      D. 75-100%

24. Does your work involve:
      A. Electroplating Yes No
      B. Precious Metal Refining Yes No
      C. Case Hardening of Steel Yes No
      D. Gas Manufacturing Yes No

25. How many hours per day do you spend in an
   automobile?_____

26. Are you exposed in the work or home environment to a gas
   heater? Yes No

FOR OFFICE USE ONLY: CO_____ BRS_____ H or L
Appendix C

Follow-up Questionnaire
Follow-up Questionnaire

Name Code: ___________________________ Date: ______

1. How many cigarettes have you smoked in the last 24 hours?____

2. Have you had a cigarette since your last visit?
   Yes  No - If you answer No, go to question 5.

3. If yes, have you had more than 2 cigarettes?
   Yes  No - If you answer No, go to question 5.

4. If yes, has there been a period of at least 24 hours in which you did not smoke even though you have smoked more than 2 cigarettes since your last visit?
   Yes  No

5. What is the maximum average number of cigarettes per day you have ever smoked?________

6. Are you now, or have you ever used, nicotine chewing gum or a nicotine skin patch?
   Yes  No
   If yes, circle the ones that apply:
   1. I am using it now
   2. I have used it before
   3. I found it helpful
   4. I did not find it helpful

7. Does your work involve:
   A. Electroplating
   B. Precious Metal Refining
   C. Case Hardening of Steel
   D. Gas Manufacturing
   Yes  No

8. How many hours per day do you spend in an automobile?______

9. Are you exposed in the work or home environment to a gas heater?
   Yes  No

FOR OFFICE USE ONLY: CO______
Appendix D

Authoritarian/Direct Suggestions for Each of the Three Trance Inductions
As your body is free to relax your mind is free to wander. It can wander wherever it wants....have any thoughts that it would like. It may even wander to the realization that you are here now because you want to give up smoking cigarettes. Your mind may continue to wander and come back to this realization time and again as your body continues to relax. It may even wander back in time....five years....ten years....fifteen years....all the way back to kindergarten....where you learned so many things. Letters for example, it was difficult at first to learn them all to tell the difference between an A and an O....a B and D....or a P and Q....but you learned them....and as you moved forward in school and in learning you could put letters together....C, A, T.... and if you changed one letter....B, A, T....it became something altogether different. You also learned numbers as you went through school. You learned more about phrases....sentences....stories....in fourth and fifth grade.... social studies....science....and more complicated sentence structure....and arithmetic and maybe it was in junior high school.... or high school when you may have looked around and saw what adults or friends were doing. They dressed certain ways....talked certain ways....perhaps some of them smoked. And as you were learning so many things....even how to be independent....you learned to smoke. And at the time it was right for you but now things are quite a bit different. Now you can learn not to smoke. Nothing is beyond the power of your unconscious mind. It will help you unlearn smoking. It will help you capture the feeling that you used to have before you learned to smoke. That feeling of a healthy body....able to fill your lungs with clean
healthy fresh air and I give you the suggestion that you do not want to smoke now. And with your body free to relax... your mind free to wander... you may find that you can relax even more... become more comfortable... and I give you the suggestion that in the future you will not want to smoke and that you will be surprised to find that you have little craving for smoking. Oh yes, in the first couple of days as your body adjusts to withdrawing from nicotine you will experience some physiological urges... but these urges will act as signals to your unconscious mind to not smoke. You may become amazed that you even look forward to these urges because each one can act as a marker of your success... as a sign post along the way to becoming a nonsmoker. You will also notice that any craving or urge will be momentary and that it will pass quickly. Each moment, each day that passes as a nonsmoker will make it easier to remain a nonsmoker. And so you will find yourself looking forward to each next moment as a nonsmoker. As a result you have the ability to never smoke again. Even tomorrow, when you wake up you will notice the urge to smoke is experienced as a silly or ludicrous notion... as you go through your day you will find yourself thinking that people you see smoking look silly and you will even develop a sense of compassion for them as you realize the damage they are doing to their bodies... and you develop a sense of pride and accomplishment at being a nonsmoker.

And the way to come out of this trance is simply to let me count from 1 to 5. 1....2....3....and as you come back up out of trance you may become more aware of the immediate environment. For example, you may be able to feel the weight of your arms on
the arms of the chair...you may be able to hear the air in the ventilation system....4....as you come up everything back to normal everything okay....5....and you can let your eyes open and stretch out if you need to.
Authoritarian/Direct Suggestions For Chiasson's Method

And as you remember that feeling of being in trance from before....you can let your body be free to relax and your mind free to wander as you slip right back into trance. Even now you may remember certain suggestions that were particularly important.... powerfu...to you. You may remember that you will be surprised to find that you have little craving for smoking. Then in the first couple of days as your body adjusts to withdrawing from nicotine you will experience some physiological urges....these urges will act as signals to your unconscious mind not to smoke. These urges will last only a brief moment....they will pass quickly. In fact, these urges can be something to look forward to because each one can act as a marker of your success....as a sign post along the way to becoming a nonsmoker. You are confident....completely confident....that you will easily let go from the cigarette habit. With the power of your unconscious mind you have made a decision to be a nonsmoker. Each moment, each day that passes as a nonsmoker will make it easier to remain a nonsmoker. Thus, you have the ability to never smoke again. You may remember in the future you will see people smoking and find yourself thinking that it may look silly....stupid....you even develop a sense of compassion for them as you realize the damage they are doing to their bodies....and you develop a sense of pride and accomplishment in being a nonsmoker.

And the way to come out of this trance is just like the way you came out of the first one by my counting from 1 to 5.
Authoritarian/Direct Suggestions For Eye Roll Technique & Arm Levitation

With your hand and arm in that position you can see the power of your unconscious mind to control not only your thoughts but your body too. You can bring on a new sense of power as you realize that you have made your decision with your unconscious mind and no force can counteract it. Oh yes, there will be temptations and even urges or small cravings in the first couple of days but these will pass quickly due to the power of your unconscious mind. Just as you learned to smoke you will unlearn to smoke. There is a time when you began smoking because it was right for you this is a new time and things are quite a bit different....so different that smoking is no longer right for you. You will find that you can let go of the habit easily. You will notice that any urge or cravings that you have will be of such a short duration....momentary....they will quickly pass and leave you further toward your goal of being smoke free. Nothing is beyond the power of your unconscious mind. It will help you capture the feeling that you used to have before you learned to smoke....that feeling of a healthy body....able to fill your lungs with clean healthy fresh air....you do not want to smoke now....in the future you will not want to smoke and you will be surprised to find that you have little craving for smoking. You can and will give up cigarettes. As time goes on you'll notice a developing sense of compassion for people who smoke. You'll even find yourself thinking thoughts such as, "How can they do that to their body? Don't they know the damage they are doing?" You become completely confident that you will overcome the cigarette...
smoking habit. I give you the suggestion that you'll be able to let go of this habit easily....so easily that you'll wonder why you even bothered to smoke in the first place....you won't miss smoking at all. From now on if you even think of having a cigarette these thoughts will take hold and you'll find yourself not smoking because it is no longer right for you; it just does not fit anymore. You begin to develop a sense of encouragement....empowerment....heightened desire and motivation from deep within your unconscious mind that will allow you to remain smoke free.

Now, to let your hand come down nice and gently all I have to do is let some of the helium escape from the balloon. And I can do that by simply opening a valve that lets some of the helium out a little bit at a time.

The experimenter will then indicate that gas is escaping and count backwards from the number the balloon was inflated to at its maximum inflation. The experimenter will give suggestions that the balloon is getting weaker and thus is less able to hold the hand up so that the hand and forearm are lowered gently to the arm of the chair. Upon their contact with the chair the following suggestions are given.

And the way to come out this trance is opposite of the way you went into to trance. So, without moving your head, and keeping your eyelids closed, roll your eyes way, way up as if you were looking inside the top of your head. Open your eyelids, and now let your eyeballs come back to a normal, neutral, comfortable position, stretch out if you need to.
Appendix E

Reframe Suggestions for Each of the Three Trance Inductions
Reframe Suggestions For Eye Fixation Induction

As your body is free to relax your mind is free to wander. It may wander wherever it wants to, back in time for example. It may wander back in time...five years...ten years...fifteen years...all the way back to kindergarten where you learned so many things...letters for example...it was difficult at first to learn them all...to tell the difference between an A and an O...a B and D...or a P and a Q...but you learned them and as you moved forward in school, and in learning, you could put letters together...C A T...and if you changed one letter...B A T...it became something altogether different. You also learned numbers as you went through school...you learned more about phrases...sentences...stories...in fourth and fifth grade...social studies, science, and more complicated sentence structure and arithmetic...and maybe it was in junior high school...or even high school...or sometime in your life when you noticed and learned that when you looked into a mirror you didn't see you...no you can't see you in a mirror...because you are all of your hopes...your dreams...your thoughts...your aspirations...your desires...your memories...your personality...instead when you look in a mirror you see your body...your hair, your eyes, teeth, nose, shoulders, hands, skin...no you can't see you...you see your body. And your body is innocent...Your body is just as innocent as a little child. If you had to help a little child...maybe three or four years of age...cross a street you would make sure that that child stood right next to you and you would probably even hold that child's hand and you would look to the left and look to the right and look back to the left...and make sure everything was clear before you stepped into...
the street and then you would cross. In fact, you might even further protect that innocent child by picking the child up in your arms and carrying the child across the street...because you know the dangers that can come upon that child. That innocent child that needs respect and protection. Even if that child begged, or pleaded, or said that she/he wanted to cross the street alone.... you know you wouldn't allow that because that innocent child needs respect and protection. And your body is the same way.... it's as innocent as that little child's. And it can be as if you are the grown-up and your body is the child. It can be as if you respect and protect your innocent body and promote health. It is as if you are the doctor and your body is the patient....and you prescribe only those things that are healthy for your child patient. You begin to see your body as a hobby....and a new found interest in caring for your body....being careful what you put into it and what you breathe....taking care of your body always...all ways.

And now you're back (in the specified place). Off in the distance is a person walking toward you. As this person comes closer he/she looks more and more familiar....until you realize that this person looks just like you. This person walks right up to you and you notice that she/he is not smoking....there are no cigarettes. You notice that his/her body is clean....fresh.... wholesome. There is no telltale odor of smoke....no acrid smell....no smell in hair....no stains on fingers....you recognize that he/she is a nonsmoker. And you look into his/her eyes and you say what you must say. Then you switch and you're inside his/her body and you feel a sense of energy....power.... achievement....as you recognize that you are a recovering ex-smoker. You feel free as a
recovering ex-smoker. You don't need those poisons and chemicals anymore. You
taught yourself to smoke way back when it seemed important to you....but things are
different now....and you feel a sense of achievement because you have taught yourself not
to smoke. You look around....but you don't see the old you....it's gone. There is just
you....a recovering ex-smoker. You feel competent and have energy as you move around
in that body. Smell the air with greater clarity.... and take a deep breath, deeper than
you've been able to take in a long time.

And the way to come out of this trance is simply to let me count from 1 to 5.
1....2....3....and as you come back up out of trance you may become more aware of the
immediate environment. For example, you may be able to feel the weight of your arms on
the arms of the chair....you may be able to hear the air in the ventilation system....4....as
you come up everything back to normal everything okay....5 and you can let your eyes
open and stretch out if you need to.
Reframe Suggestions For Chiasson's Method

And as you remember that feeling of being in trance from before you may also remember that when you look into a mirror you don't see you. No, you can't see you because you are all of your hopes, your dreams, your aspirations, your memories, your thoughts, your personality....No, when you look in a mirror you don't see you....you see your body. And your body is innocent. Your body is as innocent as a little child's and needs respect and protection that only you can provide. As you know, smoking produces hundreds of chemicals and toxins that affect your body. And just as you would never think of poisoning a young child why would you want to poison you? Your body is just as innocent....you have no desire to poison it either. It is the only body you have and you live within it. Again, it is like the inside of you is the adult and your body the innocent young child that needs respect and protection. And you may find yourself thinking of your body with a new perspective. You may begin to see your body as a new found hobby....with a new found interest in caring for your body. And as you come out of this second trance you can bring that change of perspective with you. And the way to come out of this trance is just like the way you came out of the first one by my counting from 1-5.
Reframe Suggestions for Eye Roll Technique and Arm Levitation

With your hand and arm in that position you can see the power of your unconscious mind to control not only your thoughts but your body too. It can bring on a new way of looking at things...a new perspective in which you see your body as innocent and in need of respect and protection. And as you experience the power of your unconscious mind...you may realize that somewhere deep inside you that change of perspective has taken hold and is growing...allowing you to act with respect and protection toward your innocent body. In the future you may even find yourself thinking about your innocent body and how you can respect and protect it...by what you put in it...and by what you don't allow to enter it. And that new found hobby of taking care of your body...that new found interest in caring for your body...can become more important day by day. Again, it can be like you are the adult...and your body the innocent young child that needs respect and protection. And even now you may be able to develop an overwhelming sense of purpose...of heightened drive...and commitment that this new perspective brings. And just as the balloon can support your hand...this new perspective...this new way of thinking about your body...can support your efforts so much so that in the future you may find that there are times when you lift your hand and the raising of your hand and arm acts as a signal...that reminds you of your new commitment to protecting your innocent body. You may even notice that the power of
your unconscious mind prevails from day to day....that you have occasions to be reminded that your body is innocent and in need of respect and protection.

Now, to let your hand come down nice and gently all I have to do is let some of the helium escape from the balloon. And I can do that by simply opening a valve that lets some of the helium out a little bit at a time.

The experimenter will then indicate that gas is escaping and count backwards from the number the balloon was inflated to at its maximum inflation. The experimenter will give suggestions that the balloon is getting weaker and thus is less able to hold the hand up so that the hand and forearm are lowered gently to the arm of the chair. Upon their contact with the chair the following suggestions will be given.

And the way to come out of this trance is opposite of the way you went into trance. So without moving your head and keeping your eyelids closed roll your eyes way way up as if you were looking inside the top of your head, open your eyelids, and now let your eyeballs come back to a normal neutral comfortable position, stretch out if you need to.
Appendix F

Suggestions Not Specifically Related to Smoking Cessation
for Each of the Three Trance Inductions
Suggestions Not Specifically Related To Smoking Cessation
For Eye Fixation Induction

As your body is free to relax, your mind is free to wander. It can wander wherever it wants....have any thoughts it would like. It may even wander to the realization that you are here now because you want to accomplish a change in your life....make an improvement....become physically stronger and fitter. Your mind may continue to wander and come back to this realization time and again as your body continues to relax. It may even wander back into time....five years....ten years....fifteen years....all the way back to kindergarten....where you learned so many things....letters for example, it was difficult at first to learn them all....to tell the difference between an A and an O....a B and D....or a P and Q....but you learned them....and as you moved forward into school and in learning you could put letters together....C, A, T....and if you changed one letter....B, A, T....it became something altogether different. You also learned numbers as you went through school. You learned more about phrases....sentences....stories....in fourth and fifth grade....social studies....science....and more complicated sentence structure....and you learned more and more difficult material....made more and more difficult accomplishments....it may even come to you....a memory of a time in which you felt confident. I don’t know what it was....maybe a good grade on a test....maybe something athletic....maybe getting your first job....something....sometime....when you felt confident. And as you go through this experience of hypnosis you find that you can develop a sense of self
confidence related to what you want to accomplish now. More confidence in your ability to do what you have to do each day....what you ought to do each day. With your body continuing to relax....your mind free to wander....your unconscious mind will continue to listen and learn in a very special way. It will allow each suggestion to take complete and thorough effect to help you reach your goal. You may find a heightened sense of self-confidence is being created....a level of self-confidence that can be brought forward and remain with you from now on. Oh yes, there have been times when what you set out to do was difficult....took extra special effort....and you may have even hesitated before setting out to accomplish your goals. Much like then is now....where you have decided to take the first step, even knowing that it may take some effort at first, but it will become easier and easier until it is like second nature as you become more and more like the person you ought to be. As a result of being in hypnosis and letting your unconscious mind hear these suggestions you will find it is as if time has been compressed and what you want to accomplish becomes second nature to you almost immediately. It can be as if your drive, your confidence, your motivation, all come together to team up and eliminate that awkward period in any person's life when they try to make a change....it can be as if the beginning awkward moments of learning to do something difficult are eliminated....as if the change, the task, the accomplishment is easy. As a result, you have the ability to reach your goal. Even tomorrow when you wake up you will notice something different about you....something that is positive....that fills you with enthusiasm and an overwhelming...
sense of self confidence. Even tomorrow you will notice that there is no doubt that
you will accomplish what you have set out to do....you will be focused and
distractions will be brief and minor. As a result, you will find that you face day to day
life with a renewed sense of energy....of vigor....a sense of revitalization that feels so
good that you carry it with you day after day after day. You may find that you have
an increased ability to relax better under stress....you can face stressful situations with
more relaxation.

And the way to come out of this trance is simply to let me count from 1 to 5.
1....2....3....and as you come back up out of trance you may become aware of the
immediate environment. For example, you may be able to feel the weight of your
arms on the arms of the chair....you may be able to hear the air in the ventilation
system....4....as you come up, everything back to normal, everything okay....5....and
you can let your eyes open and stretch out if you need to.
Suggestions Not Specifically Related To Smoking Cessation
For Chiasson's Method

And as you remember that feeling of being in trance from before....you can let your body be free to relax and your mind free to wander as you slip right back into trance. It may even wander to the memory of a time when you felt extremely confident. Again, I don’t know what it was....maybe a good grade on a test....maybe something athletic....maybe getting your first job....something.... sometime....when you felt confident. And again, as you go through this experience of hypnosis you find that you can develop a sense of self confidence related to what you want to accomplish now. You can develop more confidence in your ability to do what you have to do each day....what you ought to do each day. And with your body free to relax....your mind free to wander....your unconscious mind will continue to listen and learn in a very special way. You may remember that heightened sense of self confidence....a level of self confidence that can be brought forward and remain with you from now on. Oh yes, there may have been times when you hesitated before setting out to accomplish your goals....what you set out to do was difficult....took extra special effort. You may remember that after you accomplished your goal, that your change had become second nature to you. And you can look forward to this occurring again. It’s as if time is compressed and all of the early awkwardness is eliminated....the person you should be....could be.... ought to be....can arrive as if the beginning awkward moments were eliminated.
You may even notice that you have an increased ability to relax better under stress.

That you can bring on this state of relaxation much more easily now.

And the way to come out of this trance is just like the way you came out of the first one, by my counting from one to five.
Suggestions Not Specifically Related To Smoking Cessation
For Eye Roll Technique And Arm Levitation

With your hand and arm in that position you can see the power of your unconscious mind to control not only your thoughts, but your body too. You can bring on a new sense of power as you realize that you have made your decision with your unconscious mind and no force can counteract it. Oh yes, there may be distractions initially, but these will pass quickly due to the power of your unconscious mind. Nothing is beyond the power of your unconscious mind. All your life it has been there developing a sense of self confidence each and every time you accomplished a new goal. A part of you that sometimes you are not even aware of....that allows you the self confidence....the self assuredness to do many difficult things. You begin to develop a sense of encouragement....empowerment....heightened desire and motivation from deep within your unconscious mind that will allow you to be successful. And even now you may be able to develop an overwhelming sense of purpose....of heightened drive....and commitment that this demonstration of the power of your unconscious mind brings. In the future you may find that there are times when you lift your hand and the raising of your hand and arm acts as a reminder of the power of your unconscious mind. Your unconscious mind not only has power over your thoughts, but over your body too. It can bring on relaxation....even in stressful situations....allow you to relax naturally when facing a stressful event.
Now, to let your hand come down nice and gently, all I have to do is let some of the helium escape from the balloon and I can do that simply by opening a valve to let some of the helium out a little bit at a time.

And the way to come out of this trance is opposite of the way you went into trance. So, without moving your head, and keeping your eyelids closed, roll your eyes way way up as if you were looking inside the top of your head, open your eyelids, and now let your eyeballs come back down to a normal, neutral, comfortable position. Stretch out if you need to.
Appendix G

Eye Fixation Induction
Eye Fixation Induction

This is what's known as an eye fixation induction. All you need to do is sit back and relax and focus on a spot. You can choose any spot over here that is comfortable for you to look at while I count backwards from 20 taking you deeper into trance and relaxation as we go. You don't have to do anything at all, just get as comfortable as you would like.....

19 And as you're looking at your spot with your eyes, your ears will be able to hear all kinds of sounds. They may hear me rustle some papers, move my chair, or even sounds outside this office. And that's okay because none of those sounds have anything to do with what we are doing here today.....

18 At eighteen you might want to see just how relaxed your shoulders can become. And as you let your shoulders relax you may notice that even the muscles in your back can let go and allow your backbone to go nice and loose....and that feeling can spread down through your arms, your wrists, your hands, your fingers....and even down through your hips and legs and ankles and your feet.....

17 You may find that your mind wanders, that your attention shifts, it may go from one thought to another. You may be thinking about what happened today....or analyzing this procedure....or having any other kind of thoughts....and that's okay because your unconscious mind will continue to listen and hear in a very special way.....

16 And at sixteen you may be able to pick up a momentary, or transitory feeling of just floating down into your chair....as if your chair were a giant cotton ball that
provides just the right amount of support for you...conforming to every aspect or nuance of your body and allowing you to float down into its comfort....

15 And as your mind is free to wander and your body free to relax, we may start at the top of your head and you might be able to imagine....oh a feeling of something like maybe magic fingers that gently and lightly massage your scalp and radiate in all directions. Some people report this feels like a tingling on their scalp or a gentle warmth....and as the feeling spreads in all directions even across your forehead....it can bring on more relaxation as it spreads out....down through your eyebrows, around the corners of your eyes, even the muscles in your face can become more comfortable and more relaxed....around the corners of your mouth....even those muscles that allow your jaw to hang loose and slack and it might be interesting to notice which of those muscles relaxes first....and the feeling can continue to spread and allow your shoulders to relax even more....let that feeling spread down through your back letting your backbone go loose....letting the relaxation spread down to your arms, your wrists, your hands....down through your hips, your legs, your ankles, and your feet. Down to....

14 Your body free to relax, your mind free to wander and have all kinds of thoughts....even to the extent that from time to time you may become aware of not being aware of what I just said or what you thought I had said or what you were thinking as I have been talking to you....and that's okay because regardless of what your conscious mind is thinking, your unconscious mind will continue to hear and understand in a very special way.....
13 And as you continue to get comfortable and relax you may find that you are relaxing more deeply now. You may notice that some muscles are quite relaxed. Some muscles may relax quite some time from now.....

12 That's right a nice pleasant relaxation, floating down into your chair.....

11 Two vertical parallel marks....two halves working together to make a whole....like mind and body....conscious and unconscious....existing in parallel states....which can take us all the way down to....

10 A one and a zero. Your body free to relax and your mind free to wander....float....drift....and go where ever it wishes....to....

9 Sometimes things appear one way in life and then later quite a bit differently....that's true of many things in life....like even now....things may appear, disappear....blend, merge.... light, dark....and I wonder if you are experiencing this now as we go to....

8 And at eight you might imagine that you are in a tall office building....maybe on the eighth floor in front of an elevator. And the doors can open....you can look inside and see that the elevator is all yours....and you can step onto the elevator and turn around and watch the doors close....and you know how when an elevator begins to move down it produces kind of a lightness on your feet? You may be able to feel that lightness as the elevator begins moving downward. You might even be able to look up above the doors and watch the numbers change from 8 to 7.... to 6.... and as you watch the numbers change and the elevator moves down past each level, each floor, it carries you deeper into
trance and relaxation and hypnosis...5....4....and as the elevator continues moving down and taking you deeper into trance and hypnosis you may develop a sense of anticipation of going to a place you have been before or would like to me, a very relaxing peaceful place. 3....2....1....deeper and deeper until the elevator comes all the way down to the bottom and as the elevator comes to a gentle stop you may be able to notice the sound that an elevator makes as it stops or that gentle feeling that's kind of a shimmy from side to side as an elevator gently comes to the bottom....0....there....and then the doors can open and you may find that you're at the place specified by the subject prior to trance induction that was described as a carefree, relaxing, peaceful place.....

At this point the scene is described for the subject in such a way that each sense mode can be imagined being used. The subject is described as participating in the scene in a passive way such as sitting, leaning against something, reclining, or assuming other comfortable positions. Suggestions appropriate to the treatment group of the subject will be given at this time.
Appendix H

Chiasson's Method
Chiasson's Method

Let's do another trance. Hold your hand in front of your face like this (the experimenter will demonstrate the hand and arm position). As you look at your hand, notice that your fingers will begin to move apart slowly. As they do so...or after they have done so...your hand will begin to move slowly toward your face. And so just watch your hand and watch your fingers move apart...there they are starting to separate now...and before long your hand will begin to gradually move toward your face. And we're not sure...your eyes may close before your hand touches your face....as your hand touches your face....or immediately after your hand touches your face...it will be interesting to see when they close. Many people report that their hand moves toward their face bit by bit....step by step....a little motion at a time. We're not sure where your hand will touch your face it may touch your forehead....or your nose....or your chin....or just under your chin....and that's okay....we'll let your unconscious mind surprise us. (The experimenter will continue to give suggestions such as those above until the hand touches the face and the eyes are closed).

(A Upon hand face contact and eye closure the experimenter will give the following suggestion:) There....as your hand touches your face you can let your hand float gently down to your lap....or the arm of the chair....whichever is more comfortable and take in a nice deep breath of air and let it out slowly....and as you do let your shoulders relax, your backbone go loose, and your arms, your wrist, your hands, your fingers relax....even your hips, your legs your ankles, and your feet, that's right. And slip right back into that feeling

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of trance that you had a moment ago in your first trance. And as you remember that first feeling of trance you may remember (experimenter will give suggestions appropriate to the treatment group of the subject at this time).
Appendix I

Eye Roll Technique and Arm Levitation
Eye Roll Technique And Arm Levitation

The experimenter will model the sitting position for the subject such that each forearm is rested comfortably on the arm of the chair. The experimenter will then say, "I'm not sure if you can do this but we'll see what happens", while alternately lifting each hand to a vertical position with the elbow remaining on the arm of the chair to further model levitation. The experimenter will say, "We aren't sure which one it will be. We'll let your unconscious mind surprise us".

The way to go into this trance is to sit back, relax, get as comfortable as you would like....without moving your head, roll your eyes way way up as if you were looking inside the top of your head....and then close your eyelids....and then let your eyeballs come back to a normal neutral comfortable position. Take a deep breath and as you let it out slowly let your shoulders relax....your backbone go nice and loose....your arms, your wrist, your hands relax....even your hips, your legs, your ankles, and your feet....that's right. You may be able to remember what it has felt like to be in trance before....and capture those feelings....right now. And as you do so you may imagine that tied around one hand, we're not sure which we'll let your unconscious surprise us, is a string....and at the other end of the string floating above your hand is a balloon. It is a rather small balloon....maybe one foot in diameter and just large enough that you might be able to feel it bounce or tug at the end of the string as it floats above your hand. From that balloon is a long tube that comes over to a tank of helium that I have sitting here next to me and all I
have to do is reach over and open the valve on the this tank of helium and let more gas into the balloon and make it two feet in diameter. Of course at two feet in diameter the balloon is twice as large, at least twice as strong, and twice as powerful as it just was. You may be able to feel it lifting or pulling stronger now. I can reach over to my tank of helium and open the valve and let more gas in and make it three feet in diameter....with the balloon quite a bit larger....now and it can get as large as it needs to get. Pulling and lifting and raising.

The experimenter will give suggestions such as those above throughout the arm levitation exercise. Interspersed among the increasing numbers and suggestions for a balloon that lifts harder and stronger will be suggestions such as the following:

You may even notice that some fingers twitch at first. Some people report that they feel a tendency for motion in their elbow and I wonder if you can feel that tendency for motion in the crook of your arm right now. Some people report that as the balloon lifts and lifts, that there is a slight muscle contraction in the crook of their arm. You might be able to notice that one hand is touching the arm of the more lightly than the other.

These suggestions along with praise such as "that's right", will be given until the forearm, wrist, and hand are in a vertical position with the elbow remaining on the arm of the chair.

After levitation is obtained, suggestions will be given that are in keeping with the treatment group that the subject is assigned to.
If it becomes apparent that the subject's arm is not going to levitate the following suggestions will be given instead. Now isn't it interesting that the balloon has become so large and is pulling so much on your wrist and yet your wrist and of course your hand and forearm have not moved. It's as if they were so heavy in fact that the balloon has not been able to lift them up. You can see just how heavy or how light your hand and wrist and arm are. You can try to let the balloon up and you can do that now. You see, your wrist is much heavier than you thought it might be. You can try to pick up your wrist and hand and arm but it's as if someone added weight to them; they are so heavy, so relaxed, it's as if someone had poured concrete over them. You may try again to pick up the forearm, wrist and hand but find that once again they are very heavy. In fact, they can stay heavy, your arm will be heavy. We can make it lighter by taking some of the helium out of the balloon and making the balloon smaller. I can turn off the helium, open the small flap along side of the balloon with the line that I control here, and slowly allow helium to escape from the balloon. You can find that the balloon gets smaller and smaller back down from (say, the balloon was as large as 60 feet) 60 feet down to 55 feet, now 50, 45, becoming smaller and smaller, 40 feet in diameter now, (pause), 35 feet now, and you'll find that as the balloon gets smaller at some point you may be able to pick up your hand and wrist. I don't know when that will be. Maybe it might be when the balloon is at 20 feet or 15 feet, I don't know, now it's at 28 feet, 25 feet. "You can see anytime you wish if you can move your wrist and hand you can try it even now at 25 feet, 23 feet, now 20 feet, (therapist looks for any sign of movement on part of wrist or the hand and forearm at
which time the following comment is given), there you see, you can actually move just slightly as the balloon gets smaller" now 18 feet in diameter, you can pick it up even higher (observe for any vertical movement from the hand, wrist, and forearm and than reinforce it with the following statement), that's right you're doing very well you can see that now the balloon can really help your hand come up, you can begin to pick it up and let the balloon go up, too, and you can do that now, (therapist delivers reinforcers for further approximations to the hand coming up and bringing the wrist and forearm up with it), that's right, you're doing just fine, see how it raises up so nicely. You're doing very well... let them come all the way up, all the way, up, until the hand and wrist and forearm are nearly perpendicular to the floor, straight up from the floor. You're doing very well; you see how much lighter your arm and hand and wrist are now. You're doing very well you see how much lighter your arm and hand and wrist are now? Isn't this interesting how this works? Sometimes when we expect one thing, we're surprised to get something else instead.

After the above procedure is followed, whether levitation is obtained or not, suggestions will be given that are in keeping with the treatment group that the subject is assigned to.
Appendix J

End of Session Questionnaire
END OF SESSION QUESTIONNAIRE

Please circle the number that is closest to the way you feel.

The hypnosis I just received:

Will work automatically, without any effort on my part. Will have a facilitative, supportive effect on my efforts to stop smoking. Will have no effect.

1 2 3 4 5

The space below is for any comments you may have, such as why you circled the number you did, or anything else you would like me to know.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Thank you. I look forward to seeing you next week.
Appendix K

Research Participation Informed Consent Agreement
RESEARCH PARTICIPATION INFORMED CONSENT AGREEMENT

I volunteer to participate in the research project investigating single session hypnosis for smoking cessation.

If I am selected as a subject I understand that my participation will require from 4 to 8 weeks (from 3 to 5 appointments). Some appointments will be one week apart, and some will be as long as three weeks apart.

I understand that appointments will vary in length. Some sessions may last less than 30 minutes, while others may last one and one half hours. During the first session, I will complete a questionnaire that obtains demographic information and a brief smoking history. I will also fill out the TRS Personal Attitude Survey to provide a pre-hypnotic measure. Also, at this first session an expired air sample will be collected by a device similar to a breathalyzer to analyze blood gases relevant to smoking.

I understand that, depending upon the waiting list, the first session will include individual therapy that uses hypnosis to stop smoking. This session will last approximately 1 1/2 hours and include three different trances. Or, I will simply come in long enough to fill out a short questionnaire and provide a breath sample. This will last approximately 20 minutes.

I understand that the second meeting will occur 1 week later and last long enough to fill out a short questionnaire and collect another breath sample.

I understand that the third session will occur 3 weeks later and it will be the same as the second meeting unless I have not received hypnosis yet. If I have not yet received hypnosis, I will do so in this session and return 1 week later and 3 weeks after that. Each time I will fill out a short questionnaire and provide a breath sample. If I have already received hypnosis, then this will be my last session.

I also understand that there is a possibility that I will stop smoking but, as in all research, there is no guarantee. I have received and read the brochure entitled Questions and Answers about Clinical Hypnosis and realize that in the hands of a trained professional there is no danger in the use of hypnosis. I understand that in very rare circumstances some people feel uncomfortable as they begin to relax; whether with hypnosis or any other relaxation methods. I understand that only a trained therapist will provide the hypnotic treatment. The experimenter has a Limited License to practice psychology in the state of Michigan and is trained by the American Society for Clinical Hypnosis and has used clinical hypnosis for 5 years in private practice. I understand that if hypnosis is not provided directly by the experimenter, then it will be provided under his supervision and by an appropriately trained therapist. I understand that the hypnosis session may include a trained observer behind a one way mirror, or be audio taped, to ensure the consistency of treatment administration.
I understand that I may withdraw my consent and discontinue my participation in the experiment at any time.

I understand that data resulting from my participation in this experiment will be kept confidential. A number will be used for identification of data. My name and demographic information will be kept in a separate file for purposes of contacting me regarding this experiment.

I understand that this research will be conducted by Gregory Vaughan, M.A., Ed.S. under the direction of his supervisor, Galen J. Alessi, Ph.D. If I have any questions, I may contact Gregory Vaughan at 349-7959.

SIGNED: ______________________

DATE: ______________________

WITNESS: ____________________
Appendix L

Human Subjects Institutional Review Board Approval
Date: October 19, 1993
To: Gregory Vaughan
From: M. Michele Burnette, Chair
Re: HSIRB Project Number 93-04-22

This letter will serve as confirmation that your research project entitled "The treatment utility of the Therapeutic Reactance Scale in relation to single session hypnosis for smoking cessation" has been approved under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: October 18, 1994

cc: Alessi, Psychology
Appendix M

Study Flow Chart and Time Line
FLOW CHART

Response to Ad

Qualifies as a Subject?  Yes (25% of S's)

Schedule Initial Appointment. Mail Informed Consent Agreement and Wester's Brochure

Control Group Subject?  No

Treatment Session:
Pretreatment Measures:
Intake Questionnaire, TRS, COAs, & Self Report

Tx 1: Direct Suggestions & Believability
Tx 2: Reframe Suggestions & Believability
Tx 3: Suggestions Not Directly Related & Believability

1 Week Follow Up: COA & Self Report
1 Month Follow Up: COA & Self Report

Data Collection Session:
Intake Questionnaire, TRS, COAs, & Self Report

Data Collection Session: (1 Week) COA & Self Report

Data Collection and Treatment Session: (1 Month) Pretreatment Measures: COA & Self Report

33% Tx 1  Believability
33% Tx 2  Believability
33% Tx 3  Believability

1 Week Follow Up: COA & Self Report
1 Month Follow Up: COA & Self Report

END
TIME LINE

SUBJECTS
INTAKE / HYPNOSIS
(Tx 1, 2, Or 3)

1 WEEK
FOLLOW UP

3 WEEKS
FOLLOW UP

1 WEEK
FOLLOW UP

3 WEEKS
FOLLOW UP

TOTALS
4 WEEKS

CONTROLS
INTAKE / FOLLOW UP

FOLLOW UP

FOLLOW UP / HYPNOSIS
(Tx 1, 2, Or 3)

FOLLOW UP

FOLLOW UP

8 WEEKS
BIBLIOGRAPHY


