A COMPARISON OF COUNTERCONDITIONING AND ROLE-PLAYING STRATEGIES IN THE HYPNOTIC TREATMENT FOR CIGARETTE SMOKING

DISSERTATION

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By

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This study compared the relative efficacy of two different theoretically-derived strategies in the hypnotic treatment for cigarette smoking. The use of counterconditioning suggestions (present or absent) was compared to the use of role-playing suggestions (present or absent) in a two-way factorial design. Also investigated was whether there were any pretreatment variables which could predict successful long-term smoking control. Fifty adult chronic smokers were matched on the dimensions of baseline smoking rate, number of years smoking and number of previous attempts to quit smoking, then assigned to one of four treatment groups. All subjects were offered four sixty-minute group hypnotherapy treatment sessions over a three week period, with smoking rate assessed at the second, third and fourth sessions, and at one-month, three-months and six-months post-treatment. The two dependent measures of percentage reduction from baseline smoking rate and percentage of subjects in each treatment group remaining abstinent from smoking showed similar results. ANOVA procedures found a significant Time of assessment X Counterconditioning interaction, indicating that the use of counterconditioning
suggestions facilitates the long-term maintenance of smoking control more than the use of role-playing suggestions or a "hypnotic relaxation" treatment using no specific suggestions. The demographic variables of increased age, having a smoking-related health problem, and being a "stimulation" type of smoker were found to correlate highly with successful long-term outcome and to correctly classify subjects as abstainers or nonabstainers the majority of the time.
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A COMPARISON OF COUNTERCONDITIONING
AND ROLE-PLAYING STRATEGIES IN THE
HYPNOTIC TREATMENT FOR CIGARETTE SMOKING

Scientific evidence accumulating since the early 1960's clearly demonstrates that cigarette smoking is harmful to health (USDHEW, 1975). Habitual smoking has been noted as a causal or facilitative factor in the development of such disorders as cancer, heart disease, stroke, bronchitis, peptic ulcer and emphysema. Over 300,000 tobacco-related deaths occur in this country each year, prompting the Surgeon General to label cigarette smoking "the largest preventable cause of death, illness and disability in the U.S." (USDHEW, 1979). As the general public becomes increasingly aware of the many health hazards involved in tobacco use, smoking seems to be gradually losing its previous image as an adventurous, sophisticated adult pleasure. The habit is now being viewed more negatively as a dangerous and unnatural compulsion, as well as a violation of the personal rights of those surrounding the smoker. As the social zeitgeist becomes increasingly "anti-smoking," there appears to be a trend towards quitting this pernicious habit. Sixty percent of the 60,000,000 adult smokers in the U.S. report making serious but unsuccessful attempts to quit in
the recent past, while another 30 percent state they would like to quit if they could find an easy way to do so (USDHEW, 1979). Given the large number of smokers who desire to stop but find it difficult to do on their own, there is an obvious need to develop effective smoking cessation treatment methods which can be offered to the public in as brief a format as is possible. Considerable effort has gone into the building of such programs over the past fifteen years, and this study will attempt to add to this body of literature by comparing the relative effectiveness of two types of hypnotherapeutic interventions for smoking control.

Nonhypnotic Smoking Control Methods

Developing intervention strategies for the smoking habit has been a popular area of research since the late 1960's, and several good review articles are available on this topic (Hunt & Bespalec, 1974; Bernstein & McAlister, 1976; Lichtenstein, 1982). The literature in this area is quite diverse in terms of subject selection, sample size, treatment procedure, criterion for success and many other methodological variables, thus making direct comparison difficult. There is, however, a surprising similarity in long-term outcomes among the various therapies for smoking control. Generally, therapeutic interventions result in a high rate of success (approximately 60 to 70% abstinence) during or immediately following treatment, regardless of the technique
utilized (Orleans, 1979). There is considerable relapse in the six months following treatment; however, with the eventual rate of continued abstainers leveling off to about 20-25 percent of the initial subject population. Thus, it is long-term maintenance of smoking cessation that is the focus of concern, with few indications that one treatment mode is more effective than any other with a clientele which is motivated to change (Hunt, Barnett & Branch, 1971). The various nonhypnotic methods of smoking control which have been reported include

Public Information Campaigns. Antismoking advertisements in the mass media and educational programs in the school are examples of public information campaigns. Although it is difficult to measure the impact of such broad appeals to the public, they are clearly a cost-effective means of increasing awareness of the health risks involved with smoking and changing public attitudes towards smoking (Leventhal & Cleary, 1980). The Surgeon General's report of 1964 and the subsequent campaign against smoking are estimated to have produced a 30 percent reduction in annual per capita consumption of cigarettes over a ten-year period (Warner, 1977), as well as causing the trend to low-tar cigarettes. However, Schwartz & Rider (1978) estimate that the success rate for more localized mass media programs is well below the 20 percent "base rate," and that for better results more personal contact and individual instruction are needed. Thompson
reviews school educational programs attempting to reduce smoking behavior through an emphasis on health risks and the shaping of alternative behavior by modeling, concluding that none of the programs he found were effective above the 20 percent long-term abstinence level.

**Commercial Methods.** Examples of commercial methods are offered by the Schick Institute, Smokenders and Smokewatchers. Both Smokenders and Smokewatchers have been available since the late 1960's, use nine or more weekly group sessions, and emphasize gradual withdrawal from cigarettes by progressive contracting of weekly goals and the reporting of results to the support group. These methods report a 30-35 percent long-term quit rate (Kanzler, Jaffe & Zeidenberg, 1976). The Schick Institute relies on an aversive conditioning program combining shock, satiation and rapid smoking. This rather expensive program lasts five sessions and reports a 53 percent success rate at one-year follow-up, although this figure is disputed by some independent researchers (Schwartz & Rider, 1978).

**Public Service Clinics.** Popular public service clinics include the Five Day Plan sponsored by the Seventh Day Adventist Church or the American Cancer Society's "Fresh Start" program. These programs offer a variety of cessation aids to the potential nonsmoker: health information, group support and encouragement, and advice on a number of behavioral
management techniques such as self-monitoring, stimulus control, relaxation and contingency contracting. Clinics generally include 6-10 hours of contact and are often lead by a nonprofessional ex-smoker. Results in these clinics resemble the typical initial quit rate of about 60 percent and a long-term success rate of approximately 20-25 percent (Schwartz & Rider, 1978).

**Drugs.** Considerable study has gone into the search for nicotine substitutes such as Lobeline or nicotine-bearing chewing gum which can help reduce the withdrawal symptoms of the smoker attempting to quit. Recent research seems to indicate that the use of nicotine gum can be an effective addition to the traditional smoking clinic or counseling group which focuses on gradual withdrawal from the habit (Raw, Jarvis, Feyerabend & Russell, 1980).

**Aversive Procedures.** These procedures involve pairing a noxious stimulus with the act of smoking in an attempt to suppress that response and the urges which precede it. The aversive stimuli typically used in such sensitization techniques include electric shock, warm smoky air and covert or imaginal scenes. Shock aversion, which is prominent in the commercial methods' treatment regimen, has proven to be ineffective when used alone (Russell, Feyerabend & Cole, 1976). Imaginal aversion, or covert sensitization (Cautela, 1975), is being increasingly studied as of late due to its relative convenience and safety, but again has proven basically
ineffective when used alone (Barbarin, 1978). Rapid smoking is the most widely studied aversion technique and was initially touted by researchers as the treatment of choice in smoking cessation (Lando, 1977), but more recent studies are less enthusiastic. Clinicians are now emphasizing the costly necessity of medical screening for all participants in this procedure, and the results of rapid smoking furthermore seem to fade unless it is supplemented by a treatment milieu offering social reinforcement, support and positive client expectations (Best, Owen & Trentadue, 1978). Thus, all of the aversion techniques appear to be relatively ineffective when used singly, but can be valuable additions to a multicomponent treatment program.

Self-management Techniques. These procedures are based on learning theory and involve systematic manipulation of behavioral contingencies such that the smoker develops the ability to control his own behavior. Self-monitoring is one of the most basic of these tasks, involving asking the client to keep a very accurate record of his smoking behavior (e.g., when, where and how much they smoke; precipitating events; etc.). This detailed diary-keeping is intended to enhance the smoker's awareness of his usually automatic and habitual behavior, allowing more conscious choice to be applied to such behavioral chains. Self-monitoring has been utilized as a single approach to smoking cessation (McFall, 1970), but is more generally used in multicomponent programs
as a preparatory step and for data collection throughout the therapy process. Contingency contracting is a technique which involves social contracts with peers or monetary deposit contracts for not smoking. The goal of this approach is to increase motivation to quit smoking through commitment as well as to give reinforcements for alternative behaviors which are more healthy. Stimulus control procedures are based on the assumption that smoking is a conditioned response to environmental cues. Certain social situations or daily rituals become discriminatory stimuli, eliciting smoking behavior in an automatic manner. Treatment involves gradually narrowing the range of stimuli to which smoking is associated; fading the number of places and times when smoking is allowed until abstinence is reached (Upper & Meredith, 1970). Systematic desensitization procedures have been tried with smokers, with the rationale that smoking is often cued by anxiety and thus may be controlled if anxiety-producing cues were desensitized. Studies such as Wagner & Bragg (1970) have generally failed to support the usefulness of systematic desensitization for smoking control and, more generally, none of the specific self-control techniques have proven to be effective when used by themselves (Lichtenstein, 1982). Most of the current research involves combining a variety of behavioral methods into a multicomponent treatment package emphasizing self-management. Procedures such as self-monitoring, contingency contracting and stimulus narrowing are often used to stop
the habit, while techniques such as relaxation training, stress management and the development of substitute behaviors are encouraged to sustain abstinence over a long period of time.

Hypnosis and Smoking Control

The term hypnosis refers to an altered state of consciousness which is generally produced by a formalized induction procedure involving instructions for bodily relaxation and concentration on a narrow range of stimuli. Once lead from the normal waking state into a "trance" state, the good hypnotic subject will evidence heightened suggestibility and may be lead to perform new behaviors or experience altered memory, perceptual and personality processes. The technique of hypnotic influence has been used as therapy throughout recorded history, although it has received different labels and had different causative theories applied to it. The tribal medicine man's "spirit" explanation for hypnosis became Mesmer's "animal magnetism" and eventually evolved into the more current concepts of suggestibility. Whatever the theoretical understanding of the phenomenon, it seems clear that about 90 percent of the adult population is susceptible to hypnotic procedures to at least a minimal degree and, fortunately, that most clinical hypnotherapy can be accomplished with only a light and easily attained trance state (Udolf, 1981). Hypnosis has been reported as being effectively used in a wide variety of treatment situations:
surgical, childbirth and dentistry anesthesia; chronic pain analgesia for problems such as arthritis and low back pain; psychophysiological illnesses such as asthma, migraine, peptic ulcer, psoriasis and hypertension; sexual dysfunctions such as impotence, premature ejaculation and vaginismus; stress or anxiety-related disorders including phobia, insomnia and obsessive-compulsive conditions; intrapersonal difficulties such as depression, low self-esteem and amotivation; and interpersonal problems requiring altered thoughts, attitudes and behavioral approaches in order for change to take place (Kroger, 1977). Hypnosis has further been found to be useful in the treatment of habit disorders such as obesity, alcoholism and smoking (Kroger, 1977). It is this last clinical problem which will be focused upon in this study.

The use of hypnosis to help people stop smoking dates back to the late nineteenth century when Bernheim (1903) utilized suggestions for direct symptom removal as well as associating imagined nausea and vomiting with the tobacco habit. This type of direct suggestion and aversion therapy is still in use today, but it must be emphasized that a wide range of other techniques are also used following the hypnotic induction, some of which have been listed by Katz (1980): direct suggestion to stop smoking; direct suggestion to reduce urges to smoke; age regression to experience the memories of starting to smoke; time progression to experience future
success in remaining tobacco free; sensitizing the hypnotic subject to rewards or punishments for various tobacco-related behaviors; "ego strengthening" or building up the client's feelings of confidence and self control; developing perceptual changes such as no longer enjoying the taste or smell of cigarettes; etc. As can be seen in this lengthy list of approaches, reporting that "hypnosis" is used as a treatment can mean a great number of different things and the researcher had best describe the procedure in detail so that it may be adequately evaluated and compared to other treatment strategies. A lack of descriptive specificity is a problem with many of the published reports concerning hypnotherapy for smoking, with authors often failing to state what their hypnotic interventions entailed beyond an induction procedure. Comparison of the hypnotic studies is further made difficult by a profusion of methodological differences such as varying subject population, individual versus group settings, different number and time span of treatment sessions, standardized versus individually tailored suggestions, whether self-hypnosis is taught, and whether adjunctive or follow-up contact is included in the intervention (Holroyd, 1980). Despite this confusing variety of treatment approaches, an attempt will be made to briefly review the major studies involving hypnosis for smoking behavior and to finally compare and contrast them, noting pertinent researchable issues and developing the basis for the current study.
The hypnosis literature prior to 1970 consists of multiple case studies and unsubstantiated claims or recommendations for clinical use with smokers. Johnston & Donahue (1971) review these published reports and find that "no solid facts have as yet been demonstrated in terms of existing research . . . hopefully, sophisticated, well-designed and controlled research will soon become available" (p. 271). In 1970, the *International Journal of Clinical and Experimental Hypnosis* devoted an entire issue to hypnotic treatment for smoking and presented four articles which have since that time become the frequently-referenced foundation for many future studies. The first of these studies (Spiegel, 1970) has received considerable attention because of its brevity, positive emphasis and ease of application. Spiegel's treatment involves a single 45-minute individual session in which three standardized suggestions are given: a) for your body, smoking is a poison; b) you cannot live without your body; and c) you owe your body respect and protection. This three-point commitment to self-preservation (and therefore ceasing to smoke) is elaborated on and rehearsed until the subject memorizes it. The client is then taught self-hypnosis and urged to practice such several times per day, repeating the suggestions to himself on each occasion. With no further behavioral intervention or follow-up contact, 20 percent of Spiegel's 615 hard-core smokers completely stopped smoking and another 20 percent significantly reduced their
smoking six months after the single session. Spiegel's procedure has been replicated by Berkowitz, Ross-Townsend & Kohberger (1979) with a similar outcome of 25 percent abstinence at six months.

Hall and Crasilneck (1970) reported the results of treating 75 smokers with four sessions of individually-administered hypnosis; the first three appointments on consecutive days and the final session one month later. Subjects received standardized suggestions that there would be no craving for cigarettes, the mind would block out discomfort and a state of relaxation would be maintained. Subjects were required to phone in a daily progress report throughout the treatment period, but were not instructed to use self-hypnosis or to mentally rehearse the suggestions. Follow-up data shows that 64 percent of the smokers remained abstinent at ten months—an impressive figure that is somewhat diluted by the fact that Hall and Crasilnek's subjects were all physician-referred and suffered from smoking-related diseases which may have increased their motivation for treatment compliance.

A third study presented in the 1970 IJCEH special edition was a twelve-hour marathon group hypnotherapy session by Kline (1970) which reports the highest success rate (88% abstinence at one year) of any treatment for smoking yet published, hypnotic or nonhypnotic. Kline bases his approach on the theory that it is the unpleasant experience of nicotine withdrawal (consisting of muscular tension, rapid and
shallow breathing, anxiety and irritability) which makes it so difficult for many smokers to maintain their abstinence from cigarettes. His treatment method focuses on counter-conditioning and desensitizing such deprivation reactions through a process of covert imagery and deep relaxation. Subjects are required to stop smoking 24 hours prior to the treatment session, thus guaranteeing a high deprivation level for all participants. The deprivation experience and craving for cigarettes is then intensified through suggestions, imagery and group discussion in a manner similar to flooding or implosion techniques. After all subjects have attained a state of extreme craving, the hypnotic state is deepened to the point of complete relaxation with further suggestions of nonsmoking-related gratification through alternative physical activities. This tension-relaxation cycle is repeatedly practiced throughout the 12 hour session, with subjects also taught self-hypnosis and instructed to rehearse this process as needed following the treatment session.

Kline's extraordinarily successful program has been replicated only by Ozbek (1975), who studied whether the use of a hypnotic induction and a deprivation period were necessary factors in the procedure by comparing four groups in a 2 X 2 factorial design. Ozbek found that the use of hypnosis added significantly to the treatment method (67% abstinence with hypnosis versus 30% without using an induction), whereas the deprivation period prior to the treatment session did not improve outcome.
The final study presented in the IJCEH special edition was by Nuland and Field (1970). Their hypnotherapeutic treatment for smoking involved four weekly individual sessions and resulted in 60 percent of their 84 subjects remaining abstinent after six months. Nuland and Field induced a light hypnotic state and then the subject's reasons for wanting to quit were fed back to him and made more vivid through suggested imagery. The subject was further asked to meditate about his smoking problem, with this content often providing excellent phrases and images which can later be used to individually tailor suggestions. Subjects are taught self-hypnosis and urged to maintain telephone contact with the therapist during the first week of abstinence. Nuland and Field emphasize that direct suggestions such as "you will not smoke" are never used in their indirect approach, with their focus placed instead on solidifying the subject's commitment to quit, building up the individual's unique motivations to quit, and teaching self-relaxation as a substitute activity and maintainer of treatment effects.

Since that 1970 special edition, there have been 25 pertinent studies reported in the professional journals and dissertation abstracts. Most of these reports are comparative studies and will be reviewed later in a topical fashion, but first several noncomparative multiple case study reports will be described in order to give an
indication of how hypnosis is currently being used for the control of smoking. Miller (1976) and MacHovec and Man (1978) both continue to use primarily a hypnoaversion approach in order to countercondition the habitual smoker. Miller reports the treatment of 1,000 clients in his psychiatric practice solely with a hypnotic induction and the suggested imaginal pairing of the smell and taste of cigarettes with a remembered episode of feeling nauseous. This hypnotic conditioning was administered weekly for 4-6 months and then monthly for a year, with the result that 68 percent of Miller's clients were abstinent from smoking after one year. Miller's lengthy treatment contact and multiple sessions seem rather impractical and too expensive for wide-spread use; however, MacHovec and Man successfully utilized an aversive technique which was extremely brief. Clients in this study were seen for only three 30-minute sessions in which they were presented an induction, specific aversive suggestions as to disagreeable taste or health hazards, and an aversive message concerning cigarettes which they could repeat to themselves. Subjects were instructed to take a deep breath and recall the aversive message and suggestions whenever experiencing a desire for a cigarette. With just this simple format and brief contact, 50 percent of their clients were still abstinent at six months follow-up. Despite the success of
these two hypnoaversion techniques, many clinicians choose to utilize a more positive approach to the problem of smoking.

Stanton (1978) describes his single session method as including: initial emphasis upon the establishment of a positive expectation for success; ego-enhancing suggestions such as feeling more self-confident, independent and optimistic; specific suggestions directed towards the abrupt cessation of smoking; an elaborate visualization of cigarettes and the desire to smoke being carried away by a "red balloon;" and a success visualization in which the subjects imagine themselves as relaxed and proud nonsmokers in situations where they previously would have smoked. Stanton obtained a six-month abstinence rate of 45 percent with this brief and simple approach, a much better success rate than Spiegel (1970) obtained with his one-session method in which the suggestions were quite standardized and little visualization was employed.

Another approach which emphasizes visualization and covert rehearsal processes is described by Sanders (1977). Her four-session group hypnotic technique utilized: "brain-storming" about reasons for wanting to become a nonsmoker; time progression and imagery to consider the possibility of being a nonsmoker in the future; having a hypnotic dream about smoking to identify unconscious associations, motivations and resistances to quitting; and imaginarily rehearsing being a nonsmoker in a problematic situation. Each of these steps
is suggested to all group members while they are hypnotized, with group discussion following each mental exercise. Sanders reports a 68 percent abstinence rate after six months with her approach, which indicates that traditional group process factors may complement the effectiveness of hypnotic procedures for smoking control. Also of interest is Sanders' emphasis on modifying the social role of being a "smoker" and the expectations which are associated with such a role, rather than attempting to change craving or smoking behavior through direct suggestion or counterconditioning.

Although the previously-mentioned studies have shown that hypnotic treatments for smoking are usually highly effective, they did not utilize control groups in their research designs in order to assess whether success rates may be due to nonspecific factors such as spontaneous remission by highly motivated and self-selected clients. Several studies (Alevy, 1978; Cornwell, Burrows & McMurray, 1981; Javel, 1980; MacHovec & Man, 1978; Pederson, Scrimgeour & Lefcoe, 1975; Schubert, 1983; Shewchuk, Dubren, Burton, Forman, Clark & Jaffin, 1977) have so far compared hypnosis to a no-treatment or waiting list control group, with most finding that hypnosis was significantly more successful. These studies generally found that very few subjects who were randomly assigned to no-treatment or waiting list
control groups were able to quit smoking on their own, indicating that the hypnotic procedures do have a specific treatment effect.

In attempting to answer the question of whether hypnotic procedures have a specific treatment effect beyond the influence of placebo or expectancy factors, two studies have compared hypnosis to attention placebo control groups. Barkley, Hastings & Jackson (1977) found that a standardized group hypnotic treatment, based on the format of Hall and Crasilneck (1970), was no more effective at producing abstinence or reducing the rate of smoking than an attention placebo group which watched educational films about the dangers of smoking and discussed various problems they might be experiencing in quitting smoking. Fee (1982) also found no significant differences between a standardized group hypnotherapy method and an attention placebo group similar to Barkley et al. (1977). These two findings might seem to suggest that hypnotic procedures are effective only to the extent that they are potent placebos and enhance the subject's expectations for improvement; however, since the success rates of the treatments in these studies are relatively low compared to that reported in other hypnotic research with smoking, both Fee and Barkley et al. may have inadequately designed or administered their therapeutic interventions. Thus, the question of whether hypnosis has a treatment
effect in smoking control beyond the typical nonspecific factors (Kazdin, 1980) appears to still need answers.

Hypnosis has been compared to various other forms of treatment for smoking with rather mixed and confusing results. Compared to group counseling, Francisco (1973) and Shewchuk et al. (1977) found no significant differences in smoking outcome, while Glad (1979) found group counseling to be less effective and Pederson et al. (1979) found the combination of hypnosis and group counseling to be significantly more potent than either treatment when used alone. It would thus appear that while a delimited hypnotic treatment and a more generalized group counseling treatment are each somewhat effective in controlling smoking behavior, the combination of the two techniques into a broader treatment package is preferable. In comparing hypnosis to individual counseling, Shewchuk et al. (1977) again found that there were no significant differences in long-term smoking abstinence. Several researchers have compared hypnosis to simple relaxation training for smoking control, with Francisco (1973) finding no difference between the two, but Pederson et al. (1979) and Schubert (1983) both finding that relaxation alone was much less effective than a complete hypnotic approach.

Alevy (1978) added a self-control treatment package to the relaxation training and found that the outcome obtained was equal to that of hypnosis. In comparing hypnosis to a
self-control package without relaxation, Glad (1979) found hypnosis to be superior, suggesting that the relaxation component is very important to the overall effectiveness of hypnotherapy for smoking, but that it is best if the hypnotic approach also includes a more general counseling aspect aimed at teaching self-control strategies. Hypnosis has finally been compared to the premier behavioral technique of rapid smoking, with Glad (1979) finding hypnosis to be more effective, while Barkley et al. (1977) and Perry et al. (1979) found rapid smoking to be the superior treatment. These mixed results are further problematic in that while Perry and his cohorts found that a combination of hypnosis and rapid smoking does not add to the effectiveness of rapid smoking alone, Tori (1978) found just the opposite (i.e., hypnosis added to a rapid smoking treatment does improve outcome).

In summarizing the comparative literature on hypnotherapy for smoking control, it can be said that hypnosis "works" for this clinical problem, but whether it works better than other treatment approaches and why it works has yet to be shown. As Katz (1980) cautioned, the label of "hypnosis" is used in such a broad and general way that two "hypnotic" treatments are seldom equivalent or even similar to each other. Furthermore, treatment approaches with different names often contain the same basic components. For instance, hypnotic and cognitive-behavioral techniques overlap to a
large extent in that each includes relaxation training, covert conditioning and covert modeling processes; thus, distinct comparisons of the two approaches is difficult. The pertinent research question now appears to be "what specific treatment components in what combination are most effective for this problem?" rather than asking which general approach is the best.

Researchers have also been interested in finding correlates to a successful outcome in these hypnosis for smoking studies; factors which can differentiate the abstainers from the relapers and possibly be utilized as predictor variables. Significant correlations to breaking the habit have been reported in the previous studies for such variables as: young age, high educational level and being a light smoker (Glad, 1979); having a home environment supportive of quitting (Francisco, 1973); initially expecting an effortful process rather than a magic solution; and several motivational variables such as a low-rated current need for cigarettes, a high-rated desire to quit smoking and few reported reasons for smoking (Perry et al., 1979). There have been no personality factors, including locus of control (Shannon, 1980), which have correlated with outcome, and there is even controversy over whether the trait of hypnotic susceptibility predicts outcome in that three studies (Alevy, 1978; Dipiano et al., 1982; Schubert, 1983) have found that it does and four studies (Perry & Mullen,
1975; Mott, 1979; Perry et al., 1979; Cornwell et al., 1981) have found that it doesn't have a significantly positive relationship with long-term outcome. Of all these predictors, motivational level appears to be the best, indicating that it is the initial decision, commitment and desire to stop smoking that is most important in the long term. When the smoker reports himself to be genuinely "ready" to quit he will be most likely to succeed, with the method of cessation and other environmental factors of secondary importance.

Reviewers of the research in this area (Johnston & Donahue, 1971; Katz, 1980; Wadden & Anderton, 1982) have been critical of many common methodological weaknesses: insufficient data about procedures and results, making replication or comparison difficult; unstandardized procedures; small sample sizes; too few treatment sessions; inadequate self-report measures; lack of attention to individual differences among smokers such as history, motivation and level of use; infrequent assessment of hypnotic susceptibility or attained trance depth; lack of proper control groups; treating hypnosis as a unitary intervention, when it is actually only one component of a multi-faceted treatment; lack of follow-up data; infrequent equating of experimenter contact or treatment expectancies across groups; differences in absentee and dropout rates not noted; etc. Although more recent studies appear to be correcting these procedural design problems,
evaluating and interpreting the results from such methodologically diverse and complex studies remains a confusing task.

Holroyd (1980), in a major review of the hypnotic studies concerned with smoking control, has attempted to simplify this task by isolating the most important methodological variables leading to successful treatment outcome. She finds four factors to be necessary in order for hypnotic control of smoking to be potent and long-lasting: four or more hours of treatment contact; intense interpersonal interaction in the sessions; the use of suggestions which are tailored to the specific motivations and characteristics of the client; and adjunctive or follow-up contact. Holroyd states that when these conditions are met, at least one-half and often more than two-thirds of the smokers who begin treatment stop smoking and remain abstinent for six months. As previously mentioned, this is a much better rate of success than the 20-30 percent "base rate" that most nonhypnotic interventions have shown.

Models of Smoking Behavior

A further difficulty with most of the hypnosis for smoking studies is that their interventions are unrelated to any theory of smoking behavior. Ideally, the choice of therapeutic procedures should be based upon a theoretical model explaining the psychological mechanisms controlling the habit and why this specific treatment might be beneficial.
Several such models have been proposed, with varying emphases on behavioral, cognitive, affective and pharmacological aspects of the problem.

Behaviorally-oriented authors such as Hunt & Matarazzo (1970) conceive of smoking as simply a habit, or "a fixed behavior pattern overlearned to the point of becoming automatic and marked by decreasing awareness and increasing dependency on secondary, rather than primary, reinforcement" (p. 67). The smoker is said to have learned this maladaptive response during mass trials in diverse stimulus conditions and under partial reinforcement schedules, thus making smoking behavior quite generalized and resistant to extinction. Treatment efforts in such a model would entail altering the behavioral contingencies which maintain the habit (e.g., gradually narrowing the stimuli which elicit the response, using self-reinforcement for engaging in alternative behaviors to smoking, changing automatic motor activities associated with smoking, etc.).

Social psychologists such as Mausner & Platt (1971) emphasize the cognitive dimension of smoking in that cigarettes play an important part in the self-concept of those who smoke. The cigarette user gradually develops the personal construct of himself as a "smoker," accepting this label as a social role and incorporating this into his identity. Thus, giving up smoking in this model requires a broad change in the smoker's belief system, possibly through
role-playing or cognitive restructuring techniques which are often aided by the identification with and support from a cessation group.

A third model of smoking behavior, offered by Tomkins (1966), stresses that the habit is used primarily for affect management; to enhance positive emotional states and to minimize negative emotional states. Tomplins explains that all smokers have their own individual functions or reasons for smoking, with many people lighting up in order to feel stimulation or enjoyment (positive affect) while others smoke in order to reduce anxiety or suppress anger (negative affect). Intervention methods based on this affect management model would first want to identify the type of smoker being treated (i.e., positive affect versus negative affect), counter the positive association between smoking and the desired affect change, and find an alternative method of coping with dysphoric emotional states. It should be noted that later studies have echoed Tomkins' concern with locating the individuals' personal reasons for smoking prior to attempting treatment.

One of the most popular methods of assessing motivation for smoking behavior is the Horn-Waingrow scale (Horn & Waingrow, 1967), which measures six motive factors: stimulation, or smoking to arouse and energize yourself; handling, or smoking for the enjoyment of sensorimotor manipulation; relaxation, or smoking for the accentuation of pleasure; crutch, or smoking as tension reduction and coping with stress; craving,
or smoking due to intense need and psychological addiction; and habit, or compulsive smoking without much conscious enjoyment. Whether these self-reported motives for smoking are accurate representations of the mechanisms which really maintain the behavior, and whether different types of treatments can be matched to the primary reason for smoking are questions which still require answers.

Due to the fact that cigarettes contain psychoactive agents such as nicotine, a complete account of smoking must consider the role of physiological addiction. Unfortunately, most of the previous psychological models of smoking behavior have ignored or minimized the complication of pharmacological factors. The chemical agent nicotine acts as a peripheral and central nervous system stimulant, leading to physiological arousal and activation which can have primary reinforcing effects for the smoker. In fact, smokers have been reported to regulate their blood level of nicotine by smoking more frequently and inhaling more deeply when unknowingly switched to low-nicotine cigarettes (Jarvik, 1970). Thus, at least for heavy smokers, there appears to be a chemical dependency process involved in smoking in which an optimal level of nicotine must be maintained in the blood. The interventions stemming from this model would most likely be drug treatments such as the graduated use of nicotine chewing gum or a nicotine antagonist like lobeline.
A recent model of smoking behavior which takes into consideration both pharmacological dependence and the traditional psychological aspects of the habit is the "multiple regulation" model of Leventhal & Cleary (1980). These authors, similar to Tompkins, believe that smoking is a conditioned response to dysphoric emotional states and that it is triggered by the subjective experience of craving, which is associated with drops in the blood level of nicotine or with an external situation which has been paired with smoking in the past. Thus, both internal and external cues may generate the dysphoric emotional state of craving and lead to smoking as an affective homeostatic mechanism. Leventhal & Cleary's model suggests that treatment for smoking must focus upon dissociating the link between affective states and discrepancies in blood nicotine levels in order to be effective. In order to do this, the clinician must insure that the smoker is in a nicotine-deprived state before receiving intensive positive or aversive counterconditioning. This sort of direct manipulation of the subject's emotional state during the withdrawal experience has rarely been incorporated in treatment programs, but is apparent in approaches such as the hypnotic work of Kline (1970).

How does hypnosis fit into these various models of cigarette smoking and provide an effective means of intervening in the habit? Traditionally, hypnosis has chiefly been used as a method of increasing a subject's "will power"
or commitment and motivation to quit (Stanton, 1978). Achievement of a hypnotic state allowed the smoker to fully focus attention on the problem and on the repeated nonsmoking message from the hypnotist. Suggestibility was increased, causing the subject to uncritically accept and act on much of what was communicated. The conviction was developed that smoking is aversive and that nonsmoking is desirable and achievable. Such a description, which has much to do with the placebo effect, best fits a "communication" model in which hypnosis is useful to the extent that the smoker receives the persuasive information and complies with it.

Hypnotherapy can also fit into the behavioral model in that it often includes techniques similar to relaxation training, covert sensitization and systematic desensitization. Covert counterconditioning is thought to be facilitated by the hypnotic state in that imagery is made more vivid, relaxation more profound and affective experiences more intense (Lazarus, 1973).

Hypnosis may further fit into the cognitive role-playing model, again due to the enhancement of fantasy and imagery processes. A hypnotized subject may become more involved in imaginal role-playing because of increased dissociative abilities, a greater sense of subjective realism and the utilization of more creative thinking (Sanders, 1976).

In summary, hypnosis may be considered to aid in smoking cessation in one or more of three ways: as a persuasive
communication which inspires compliance; as a method of covert conditioning in which behavioral, emotional and attitudinal contingencies are altered; and as a method of imaginal role-playing in which the smoker may mentally concentrate on and creatively approach his problem behavior, his self-concept and alternative ways of being. Every hypnotherapy program for smoking control contains a unique mixture of these three theoretical emphases, but there is no known research which compares the relative effectiveness of these different approaches (i.e., is one emphasis of primary influence on outcome? and are the effects of the different approaches addictive? etc.).

Purpose of the Study

This study compared the relative effectiveness of the different theoretically-derived strategies in the hypnotic treatment for cigarette smoking. Primary focus was on the counterconditioning treatment strategy, as exemplified by the flooding/desensitization procedures of Kline (1970), and the role-playing treatment strategy of Sanders (1977) in which imagery rehearsal techniques were stressed. The Kline and Sanders studies are the most successful reports in the literature on applying hypnosis for smoking cessation, but have yet to be replicated or extended with the single exception of Ozbek (1975). The current study partially replicated both previous studies in an equivalent format in order to compare their effectiveness in reducing the rate of smoking or in producing long-term abstinence from smoking.
The comparison of counterconditioning (present or not present) and role-playing (present or not present) techniques required the use of four treatment groups (see Figure 1, Appendix I). The group receiving neither counterconditioning nor role-playing acted as a "nonspecific treatment" group and received only hypnotic relaxation and group support, without any specific suggestions presented during the trance state. In sum, this study was primarily a comparative one intending to find whether either treatment strategy was superior to the other, whether presenting both treatments had a positive interactive effect, and whether either treatment was superior to the basic relaxation and support group. Secondarily, this study was interested in finding any pretreatment variables which correlated with successful outcome and thus might be useful predictors in future clinical work with smokers.

Hypotheses

Hypothesis 1. The group receiving counterconditioning was predicted to achieve a significantly greater percentage of smoking reduction and cessation at six-months follow-up than the relaxation and support group. This systematically applied flooding and desensitization procedure should theoretically help the subject to better cope with the craving experience of nicotine withdrawal and thus produce superior results compared to the nonspecific treatment group.

Hypothesis 2. The group receiving the role-playing treatment was predicted to achieve a significantly greater
percentage of smoking reduction and cessation at six-months follow-up than the relaxation and support group. This creative imaging and covert rehearsal process should theoretically assist the smokers to alter their self-concept and expectations in line with being "nonsmokers" and thus produce superior results compared to the nonspecific treatment group.

**Hypothesis 3.** The group receiving both the counterconditioning and role-playing treatments was predicted to achieve a significantly greater percentage of smoking reduction and cessation at six-months follow-up than any of the other groups. The use of both techniques should theoretically result in a positive interaction effect.

**Hypothesis 4.** The group receiving counterconditioning was predicted to achieve a significantly greater percentage of smoking reduction and cessation at six-months follow-up than the group receiving the role-playing treatment. It was predicted that helping the smokers deal with the immediate distress of tobacco withdrawal through the Kline procedure would prove to be more fundamentally important than the cognitively-oriented procedure of Sanders.

**Method**

**Subjects**

The Ss for this study were 56 adult volunteers solicited by newspaper advertisements offering a hypnotic stop-smoking clinic which was free of charge and entailed participation in scientific research. Of the 56 people who were screened,
matched and assigned to the treatment groups, there were six who did not appear for any treatment sessions and were therefore dropped from the study. The remaining 50 Ss had good attendance ($M = 3.10$ out of 4 meetings), actively participated in the group activities and cooperatively responded to the follow-up phone contacts. These 18 men and 32 women ranged in age from 16 to 70 years ($M = 35.18$), had been smoking from 1 to 50 years ($M = 18.60$), and at the time of entering the clinic were smoking from 3 to 80 cigarettes per day ($M = 32.62$). All but three Ss reported having previously attempted to stop smoking and 14 of the Ss had even been through a professional smoking control program before responding to the ad for this study.

**Experimenters**

Two predoctoral interns with approximately equal clinical experience acted as therapists in this study, with each E assigned a treatment subgroup in each of the four treatment conditions. The study was conducted in October and November of 1983 in Wichita, Kansas (where the author was serving his year of internship). Direct clinical supervision of the treatment sessions was provided by Dr. Greg Buell, a psychologist working with the Wichita Collaborative Psychology Internship Program.

**Instruments**

The Harvard Group Scale of Hypnotic Susceptibility, Form A (Shor & Orne, 1962) was administered in order to assess each
S's level of suggestibility, with only those scoring in the mid to high range (5-12) utilized in the study. Mean susceptibility score for all Ss was 8.24, with no appreciable difference between the treatment groups. The HGSSHA is the most widely accepted group measure of susceptibility, with high correlations to the standard individual susceptibility scales (Hilgard, 1977).

A Smokers History and Motivation Questionnaire, based on a questionnaire by Marston & McFall (1971) was administered to find basic demographic data on the Ss and to establish how long each had smoked, when and where they smoked the most, whether they had ever tried to quit smoking before and what techniques they had used in their attempts to stop smoking. Included in the questionnaire, which is shown in Appendix B, is the smoking typology scale by Horn and Waingrow (1967), which tries to locate the major factors motivating smoking behavior. Ss were finally asked why they wanted to stop smoking, how motivated they were to undertake this effort, and how sure they were that they would eventually succeed in this process with the help of the hypnotic program.

The Group Climate Questionnaire (MacKenzie, 1981) was administered in order to assess whether the S's perceptions of their treatment group were equivalent and whether the aspects of group climate were particularly important to successful outcome. This new scale, as seen in Appendix C, evaluates the group setting on three dimensions: engagement,
avoidance, and conflict. Initial scale development by MacKenzie (1981) indicates that the GCQ has good construct validity and reliability.

Ss were required to keep a daily record of the number of cigarettes they had smoked throughout the treatment and follow-up period. See Appendix D for a copy of the daily record sheet that Ss completed and returned to the experimenter during the course of treatment.

Treatments

All Ss were asked to attend four treatment sessions over a three week period (see Appendix T for a listing of the session attendance per cell). Treatment was conducted in groups of five to seven members, with a single group leader. Each of the approximately sixty-minute treatment sessions was divided into three activity periods. The initial fifteen minutes was the same for all groups and involved an explanation of the treatment procedures and rationale, a discussion of hypnosis and correction of any misconceptions, and group discussion concerning any problems that the members might be having with the treatment techniques.

The second activity period lasted forty minutes, began with a group hypnotic induction (see Appendix E for the script modeled after Barber, 1977), and then the appropriate treatment suggestions (counterconditioning or role-playing) were administered to three of the groups while the fourth group underwent a hypnotic induction without receiving any suggestions or further instructions. The presentation of
counterconditioning and role-playing to the two subgroups receiving both procedures was counterbalanced so that any order effect of treatment presentation may be examined. The final activity period was the same for all groups and involved five minutes of instructions for self-hypnosis and data-keeping until the next session.

The role-playing format of Sanders (1977) emphasizes changing cognitive aspects such as the smoker's self-concept and expectations regarding their habit. Following group induction each session followed a standard format, the script of which can be found in Appendix F. This format included suggestions for "brainstorming" reasons for wanting to be a nonsmoker; suggestions for "time progression" in which the Ss imagine themselves in the future as nonsmokers; suggestions to have a "hypnotic dream" about smoking, from which unconscious motivations and resistances can be interpreted; and "imagery rehearsal" in which Ss imagine themselves coping with problematic smoking situations in a covert modeling fashion. Following each step in the process, Ss were encouraged to verbalize their thoughts and imagery, which the E then repeated, clarified and amplified. The hypnotic state was maintained throughout the session, deepened when moving from group interaction to imagery exercises, and terminated at the end of the session. Self-hypnosis was taught and daily practice in such was encouraged until the S was no longer concerned with avoiding the smoking habit.
The flooding and desensitization format of Kline (1970) emphasizes changing the subjective distress aspects of smoking withdrawal. Following group induction, imagery was used to intensify feelings associated with smoking deprivation. As seen in the script presented in Appendix G, Ss were suggested to recall times and places where smoking is most satisfying, and to vividly "feel" themselves experiencing the entire smoking process. These periods of hypnotically-amplified tension were then countered with periods of deep relaxation and imagery of healthy gratification. This tension/relaxation cycle was repeated several times. Self-hypnosis was taught and Ss were urged to practice daily until they no longer experienced a craving for cigarettes.

Procedure

Respondents to the newspaper ad were invited to an initial group screening meeting in which basic procedures were explained and informed consent (see Appendix A) was obtained. Those choosing not to be in the study, and those who were initially screened out of the study, were referred to the American Cancer Society's "Fresh Start" program. In the group screening meeting Ss were administered the susceptibility and Smoker's History and Motivation scales. Prior to the first treatment session, 56 relatively homogenous Ss were chosen from the pool and assigned to the four treatment conditions such that they were matched on the variables of cigarettes per day, years smoking and number of previous
attempts to stop smoking (see Table 1, Appendix K). At that time Ss were informed by telephone as to scheduling and further arrangements. The four treatment sessions were conducted concurrently for all Ss, with the second session following 24 hours after the first, the third session one week later and the final session two weeks later. Ss were strongly encouraged to stop smoking after the initial session in order to intensify the deprivation experience for the counterconditioning group and further discourage procrastination of the effort for all Ss. Following each treatment session, Ss turned in daily recording sheets (see Appendix D) on the number of cigarettes smoked. Follow-up data was obtained by telephone interview at one-month, three-months and six-months post-treatment, consistent with the recommendations of Bernstein and McAlister (1976). In the follow-up contacts, as shown in Appendix H, Ss were asked how much they were smoking, what factors had caused their resumption of the habit, how often they were using their self-hypnosis techniques, and whether they were experiencing any problems related to smoking. At the final follow-up, Ss were also asked to rate how helpful the treatment program had been for them and to select an aspect of the program which they believed to be the most helpful.

Data Analysis

The outcome focus in this study was on the differences across treatment conditions in successful smoking control at
six points in time: the second session, third session,
fourth session, one-month follow-up, three-months follow-up,
and six-months follow-up. Successful smoking control was
measured in two ways, both of which are common in the smoking
control literature: (a) percentage reduction from the
pretreatment daily smoking rate, averaged for the treatment
group; (b) percentage of Ss in each treatment group that report
complete abstinence from smoking. A 2 X 2 X 6 factorial
analysis of variance for repeated measures procedure was
conducted on each of the dependent measures. The levels of
the factors were: counterconditioning (present and absent);
role-playing (present and absent); and the repeated measure,
time of assessment. The Tukey HSD multiple comparison test
was used to determine which particular differences were
significant. In addition, all pretreatment and group climate
variables were analyzed using a stepwise discriminant analysis
procedure, with the criterion variable being abstinence from
smoking at the six-months follow-up.

**Results**

Subjects in all four treatment conditions experienced
some success in their smoking control effort. Figure 2
(Appendix J) illustrates the average daily smoking rates
throughout the data collection period, and shows that all
groups significantly reduced their smoking by the second
treatment session (from the pretreatment mean of 32.61
cigarettes/day to 4.32 cigarettes/day), then relapsed
moderately over the course of treatment, and finally relapsed considerably during the first few months following treatment contact. By the six-months follow-up, the "combined" treatment group reported the lowest daily smoking rate (M = 11.21) and the "relaxation" group the highest rate (M = 22.31), with the counterconditioning group (M = 15.91) and the role-playing group (M = 17.33) in the middle of that small range. The overall percentage of reduction in smoking rate was 69.25 percent by the final treatment session and dropped to 44.29 percent six months later (see Table 2), Appendix L for the listing of this data by treatment group). Sixteen of the fifty Ss had entirely stopped smoking at the end of treatment, with fourteen of those Ss remaining abstinent at six-months follow-up (see Table 5, Appendix O for the listing of this data by treatment group).

In spite of this relative success overall, the results were not able to clearly support any of the four hypotheses regarding treatment group differences. In order to specifically compare the four treatment conditions to each other in the 2 X 2 X 6 ANOVA design, there would have to be a significant Counterconditioning X Role-playing X Time interaction, thus allowing post hoc comparisons of the different levels per factor. Such a three-way interaction did not occur for either dependent measure, so what must be interpreted instead are more generally comparisons (e.g., groups using counterconditioning versus groups not using counterconditioning). The
analyses of variance for both dependent measures were quite similar in outcome, and these are summarized in Table 3 (Appendix M) and Table 6 (Appendix P). For the percentage reduction data there was a main effect for Time of assessment ($F = 35.05, \text{df} = 5, \ p < .001$) and an interaction effect for Time X Counterconditioning ($F = 3.25, \text{df} = 5, \ p = .007$). Likewise, for the percentage abstinence data there was a main effect for Time ($F = 5.96, \text{df} = 5, \ p < .001$) and an interaction effect for Time X Counterconditioning ($F = 5.93, \text{df} = 5, \ p < .001$). Multiple comparisons of the percentage reduction cell means for Time X Counterconditioning (see Table 4, Appendix N) using the Tukey HSD test show that the Counterconditioning groups were superior to the Noncounterconditioning groups at all of the follow-up points. The Noncounterconditioning groups also showed significant increases in smoking between sessions two and three, and in the first month after treatment. The Counterconditioning groups did not have significant increases in smoking at any of the time periods. As for the percentage abstinence data, multiple comparisons of the Time X Counterconditioning cell means (seen in Table 7, Appendix Q), showed that the Counterconditioning and Noncounterconditioning groups were significantly different at every time of assessment. This finding is complicated by the fact that the Noncounterconditioning groups are significantly superior at session two and then drastically relapsed to the point of being significantly
inferior to the Counterconditioning groups from there on. The Noncounterconditioning groups also show a significant relapse in the first month following treatment, whereas the Counterconditioning groups remained stable in their maintenance of abstinence over time.

In an attempt to find what pretreatment variables would correlate with and possibly predict success in a smoking control program of this sort, all demographic data were analyzed using a stepwise discriminant analysis procedure. The criterion variable used for this purpose was smoking abstinence at six-months follow-up, the most stringent definition of successful outcome. Table 8 (Appendix R) lists the means and standard deviations for all the predictor variables, divided by outcome after six months. Seven pretreatment variables were found to significantly correlate with this outcome measure: age (F = 6.80); number of years smoking (F = 5.81); having a smoking-related health problem (F = 8.08); initial rate of smoking (F = 6.50); and the smoking motivation variables of habit (F = 6.89), stimulation (F = 5.87) and crutch (F = 4.20). Using the stepwise discriminant procedure, three of these variables were found to account for most of the variance. Successful long-term abstainers were older, more likely to have a smoking-related health problem, and more likely to be the "stimulation" type of smoker. The canonical correlation for this analysis was .554 and the variance accounted for was 30.70 percent.
The coefficients for the canonical variables were .249 for smoking-related problem, .242 for stimulation, and .063 for age. The constant was 6.248. A classification matrix utilizing these three variables was able to correctly place 76 percent of the Ss as abstainers or nonabstainers at the six-months follow-up. The means and standard deviations of these predictor variables for each treatment group are listed in Table 9 (Appendix S).

Discussion

The four treatment groups yielded overall smoking reduction and abstinence rates which compare favorably to the majority of controlled studies of hypnosis and smoking, but are much less impressive than the Kline or Sanders studies upon which the current techniques are based. It should be noted that the clinical methodology of both Kline and Sanders was altered somewhat in order that they may be compared in an equivalent format, thus the results of this study may have suffered due to the inexact replication of a successful procedure. Further, both Sanders and Kline utilize individually-tailored suggestions for the Ss in their groups, a method which has proven to be very important to the success of a hypnotic treatment for smoking (Holroyd, 1980). No individualized suggestions were used in the current study in an effort to standardize the approach across treatment conditions and provide for a well-controlled comparison of the relevant dimensions.
The hypothesized treatment group differences were not supported by the results. Although the success levels of the treatment groups at six-months follow-up had the same pattern relative to each other as originally predicted (from most to least successful—Combined group, Counterconditioning group, Role-playing group, and Relaxation group), the differences between the outcome measures were not large enough to statistically warrant a conclusion of support for the hypotheses. The significant Time X Counterconditioning interactions which were obtained indicate that using Counterconditioning suggestions is a good long-term maintenance strategy in that the groups receiving Counterconditioning relapsed significantly less than the groups not receiving Counterconditioning. This Counterconditioning superiority was apparent by the third session in terms of abstinence and by the one-month follow-up for the percentage reduction in smoking. Thus, the use of Kline's flooding/desensitization suggestions, intended to help the smoker in coping with the basic withdrawal experience, does seem to have benefit over the long run. Also indicated by the Time X Counterconditioning interactions were two time periods of greatest danger for smoking relapse. The week between session two and three, and the first month following the final treatment session evidenced the largest increase in smoking rate and the largest reduction in the number of abstainers for all the treatment groups, and significantly
so for the Noncounterconditioning groups. It would appear that the length of time between session two and three was too long and that decreasing the gap of no treatment contact from one week to several days would likely be preferable in this early period of intense withdrawal. Likewise, it may have been more effective to add a fifth treatment session several weeks after the fourth in order to provide more support and practice to the Ss.

Several demographic variables proved to be helpful in predicting which Ss would be successful in maintaining long-term abstinence from smoking. It appeared in this study to be the older, long-term, heavy smokers with health problems who tended to successfully quit smoking. These abstainers described their smoking motivations as predominantly "stimulation," "crutch," and "habit" (based on the Horn-Waingrow typologies). Of the seven significant predictor variables, three appeared to be primary: having a smoking-related health problem; age; and stimulation smoking. Seven of the twelve Ss reporting a serious smoking-related health problem (seven with bronchitis, two with emphysema and three with heart disease) became completely abstinent. Those smokers who were older were also more likely to be abstinent at six-months follow-up; a finding which runs counter to several previous studies which have found that younger Ss are more successful at smoking control (Glad, 1979). Finally, smokers who reported that a strong motive for the smoking
activity was stimulation—"cigarettes help to wake me up, organize my energies, keep me going"—were most likely to quit the habit. Using only these three factors as cues, success could be correctly predicted 76 percent of the time.

It was surprising that S characteristics such as sex, educational level and hypnotic susceptibility were not found to be related to outcome as they have been in previous research (Alevy, 1978). Further, self-rated motivation and efficacy levels did not help in predicting outcome as they have before (DiClemente, 1981). All Ss tended to describe themselves as highly motivated to quit and moderately strong in their belief that they could achieve abstinence; however, these initial ratings had little discriminatory power—what Ss reported they believed before treatment began had little relationship to how successful they eventually were at the stop-smoking effort. Also of little benefit in predicting successful outcome was the group climate ratings. Ss tended to report that they were highly engaged in the group process, felt that little avoidance went on in the treatment group and that there was very little conflict among the Ss or with the leader. There was not much variability between treatment group scores on this factor, suggesting that group climate was kept fairly well standardized in the brief and directive approach used by this study. The Ss uniformly reported viewing the group atmosphere in a positive fashion and the
question of how important this treatment factor is to final outcome was not answered.

In the follow-up phone contacts, Ss were asked to honestly respond to the basic questions "Did the treatment help?" and "Why?" The majority of the Ss, even those who had seriously relapsed in their smoking behavior, expressed that they were happy that they had participated in the program. Overall "helpfulness" rating for the program at six-months follow-up was 77 on a scale of 0 to 100, with Ss stating that they found two aspects to be the most helpful—learning relaxation and self-hypnosis (20 responses), and the group discussion and support (16 responses). Unsuccessful Ss seemed to attribute their failure to their personal weaknesses or life circumstances rather than the treatment program's potency. Many Ss stated that they wanted to take part in a similar program if it were to be offered again in the future. Several Ss who failed to meet the goal of abstinence from cigarettes expressed gratitude for "teaching me a way to quit when I'm more ready to really do it."

Several Ss also reported additional benefits from the study such as feeling less nervous and having better temper control due to the regular use of self-hypnotic relaxation, as well as an increased confidence and feeling of self-control resulting from success at the smoking control effort. When questioned about the major problems they had faced in maintaining their decreased smoking, many relapsed Ss pointed
to a voracious appetite, rapid weight gain and a fear of obesity as their biggest difficulty, a finding that is similar to previous studies (Manley & Boland, 1983). Similar to the results of Gunn (1983), many Ss also listed increased stress at home, work or school as an important negative factor in their loss of smoking control—"I was under a lot of pressure at work then," "I had hassles at school and final exams," "I just got so depressed over the holidays," "I had a car accident," etc.

The main limitations of the current study are the aforementioned points concerning the use of standardized rather than individually-tailored suggestions, and the overly brief treatment contact with sessions likely scheduled too far apart at the critical relapse times. Future research efforts may want to correct these two flaws; utilizing more flexible and individualized suggestions, and providing more treatment sessions or at least some adjunct supportive measures by telephone during times of no face-to-face contact. Future studies may also want to compare variations in the specific content of suggestions under the same theoretical heading (e.g., comparison of several types of counterconditioning suggestions in order to find which specific procedures were most effectively matched with what type of smoker). Finally, future studies might utilize the three major predictor variables that were found here as blocking variables,
covariates, or some other grouping function in an attempt to replicate the finding of their importance for predicting successful smoking control.

In summary, the results of this study indicate that group hypnosis for smoking control is a generally effective treatment strategy. In comparing Counterconditioning suggestions to Role-playing suggestions, there was found a significant Time of assessment X Counterconditioning interaction which suggests that the use of Counterconditioning facilitates the maintenance of smoking control over time, particularly after treatment contact has ceased. The demographic variables of increased age, having a smoking-related health problem, and being a "stimulation" type of smoker were found to correlate highly with successful long-term outcome and to correctly classify Ss as abstainers or nonabstainers the majority of the time.
Appendix A

Informed Consent

Name of Subject: ________________________________

1. I hereby give my consent to Mr. David Bowman to perform the following investigational procedures:

   I will be asked to participate in a group therapy program involving hypnosis and designed to help me give up smoking cigarettes. I understand that personal information concerning my smoking habit will be requested and that this information will remain confidential, with only general results communicated to other professionals. I also understand that I will be asked to provide information about my smoking status 1, 3 and 6 months after the treatment program is completed, as well as providing the name of one person who can verify my smoking status after six months.

2. I have seen and heard a clear explanation and understand the nature and purpose of the procedure or treatment; possible appropriate alternative procedures that would be advantageous to me; and the attendant discomforts or risks involved and the possibility of complications which might arise. I have seen and heard a clear explanation and understand the benefits to be expected. I understand that the procedure or treatment to be performed is investigational and that I may withdraw my consent for my status. With my understanding of this, having received this information and satisfactory answers to the questions I have asked, I voluntarily consent to the procedure designated in Paragraph 1 above.

Date________________________

Signed: ________________________ Signed: ________________________

Witness __________________________ Subject __________________________
Appendix B

Personal Data Sheet

Name: ____________________________________________
Address: _________________________________________

Phone: ( ) ________________________________________
Age: __________________________
Sex: __________________________

How far did you go in school?

___ completed 9th grade or less
___ completed some high school
___ graduated from high school or received G.E.D.
___ completed some college
___ graduated from college with Bachelor's degree

Occupation: ______________________________________

Marital Status:

___ single
___ married
___ divorced or separated
___ widowed

Your health (in your opinion) is:

___ excellent
___ very good
___ average
___ poor
Which of the following health problems do you now have?

____ heart disease or heart problems
____ lung cancer
____ hardening of the arteries
____ bronchitis
____ emphysema
____ peptic ulcer
____ other (please explain)

Your current weight: ______

At what age did you begin smoking? ______

On the average day, how much do you smoke?

____ 1/2 pack or less
____ less than one full pack
____ 1-2 packs
____ 2-3 packs
____ more than 3 packs

When do you smoke the most?

____ morning
____ afternoon
____ evening
____ anytime

Where do you smoke the most?

____ at home
____ at work
____ at social settings
____ anywhere
____ other (please explain)
People smoke cigarettes for many different reasons. Please indicate how each of the following statements about smoking best fits you:

1 = Always
2 = Frequently
3 = Occasionally
4 = Seldom
5 = Never

I smoke cigarettes in order to keep myself from slowing down.

Handling a cigarette is part of the enjoyment of smoking it.

Smoking cigarettes is pleasant and relaxing.

I light up a cigarette when I feel angry about something.

When I have run out of cigarettes I find it almost unbearable until I can get them.

I smoke cigarettes automatically without even being aware of it.

I smoke cigarettes to stimulate me, to perk myself up.

Part of the enjoyment of smoking a cigarette comes from the steps I take to light up.

I find cigarettes pleasurable.

When I feel uncomfortable or upset about something, I light up a cigarette.

I am very much aware of the fact when I am not smoking.

I light up a cigarette without realizing I still have one burning in the ashtray.

I smoke cigarettes to give me a "lift."

When I smoke a cigarette, part of the enjoyment is watching the smoke as I exhale it.

I want a cigarette most when I am comfortable and relaxed.

When I feel "blue" or want to take my mind off cares and worries, I smoke cigarettes.

I get a real gnawing hunger for a cigarette in my mouth when I haven't smoked for a while.
I've found a cigarette in my mouth and didn't remember putting it there.

How many times have you tried to quit smoking?____

Have you ever attended an organized program or used a commercial method in order to quit smoking?__________

(If you have, please describe)_______________________________________________________________

People want to give up cigarettes for different reasons. Please place a priority number from 1 (your most important reason) to 5 (your least important reason) by each of the following:

____ Aesthetic or beauty reasons
____ Cost of cigarettes
____ Health reasons
____ Pressure from friends, spouse
____ Other (please explain)________________________

Indicate how strongly you are currently motivated to stop smoking by circling the number which best describes how you feel:

0  10  20  30  40  50  60  70  80  90  100

(don't want to stop) (very much want to stop)

Indicate how certain you now are that you will be able to stop smoking with the aid of this hypnotherapy method:

0  10  20  30  40  50  60  70  80  90  100

(quite uncertain) (very certain)

Please provide the following information on one person who can reliably report on your treatment success in six months:

Name: ____________________________

Phone: ( ) _______________________

Relationship:_______________________
Appendix B—continued

Please place a check beside those times that you could be available for treatment sessions in the next three weeks:

<table>
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<th></th>
<th></th>
<th></th>
</tr>
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<tr>
<td>other:</td>
<td></td>
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</tr>
</tbody>
</table>

Where did you hear about the Stop Smoking Clinic?
Appendix C

Group Climate Questionnaire

Considering your experiences in the last four treatment sessions, please indicate how each of the following statements fits your view of the group by circling the number which best describes how you feel.

1. The members liked and cared about each other.
   
   1  2  3  4  5  6  7
   (not at all) (extremely)

2. The members tried to understand why they do the things they do, tried to reason it out.
   
   1  2  3  4  5  6  7
   (not at all) (extremely)

3. The members avoided looking at important issues going on between themselves.
   
   1  2  3  4  5  6  7
   (not at all) (extremely)

4. The members felt what was happening was important and there was a sense of participation.
   
   1  2  3  4  5  6  7
   (not at all) (extremely)

5. The members depended on the group leader for direction.
   
   1  2  3  4  5  6  7
   (not at all) (extremely)

6. There was friction and anger between the members.
   
   1  2  3  4  5  6  7
   (not at all) (extremely)

7. The members were distant and withdrawn from each other.
   
   1  2  3  4  5  6  7
   (not at all) (extremely)

8. The members challenged and confronted each other in their efforts to sort things out.
   
   1  2  3  4  5  6  7
   (not at all) (extremely)
9. The members appeared to do things the way they thought would be acceptable to the group.

1 2 3 4 5 6 7
(not at all) (extremely)

10. The members distrusted and rejected each other.

1 2 3 4 5 6 7
(not at all) (extremely)

11. The members revealed sensitive personal information or feelings.

1 2 3 4 5 6 7
(not at all) (extremely)

12. The members appeared tense and anxious.

1 2 3 4 5 6 7
(not at all) (extremely)

Please describe briefly the event that was most personally important to you during the past four treatment sessions. This might be something that involved you directly, or something that happened between other members, but which made you think about yourself. Explain what it is about the event that made it important to you personally:
Appendix D

Daily Record Sheet

Name: 

<table>
<thead>
<tr>
<th>Date</th>
<th># cigarettes smoked today</th>
<th>Times self-hypnosis was used today</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

Comments:
Appendix E

Hypnotic Induction Procedure

What we'll be doing now is developing and experiencing the hypnotic state. Our procedure will be similar to the one we used in the last session, so you will again recognize that developing trance is a very naturalistic, very easy, very effortless process. I'm quite sure that it will seem to you that I have done nothing, that nothing has happened at all. You may feel a bit more relaxed, in a moment, but I doubt that you'll notice any other changes. I'd like you to notice, though, if you're surprised by anything else you might notice. OK, then . . . the really best way to begin feeling more comfortable is to just begin by sitting as comfortably as you can right now . . . go ahead and adjust yourself to the most comfortable position you like . . . that's fine. Now, I'd like you to notice how much more comfortable you can feel by just taking one very big, satisfying deep breath. Go ahead . . . big, deep, satisfying breath . . . that's fine. You may already notice how good that feels . . . how warm your neck and shoulders can feel . . . Now, then . . . I'd like you to take four more very deep, very comfortable breaths . . . and, as you exhale, notice . . . just notice how comfortable your shoulders can become . . . and notice how comfortable your eyes can feel when they close . . . and when they close, just let them stay closed . . . that's right, just notice that . . . and notice, too, how, when you
exhale, you can just feel that relaxation beginning to sink in . . . Good, that's fine . . . now, as you continue breathing, comfortably and deeply and rhythmically, all I'd like you to do is to picture in your mind . . . just imagine a staircase, any kind you like . . . with 20 steps, and you at the top . . . Now, you don't need to see all 20 steps at once, you can see any or all of the staircase, any way you like . . . that's fine . . . Just notice yourself, at the top of the staircase, and the step you're on, and any others you like . . . however you see it is fine . . . Now, in a moment, but not yet, I'm going to begin to count, out loud, from one to 20, and . . . as you may already have guessed . . . as I count each number I'd like you to take a step down that staircase . . . see yourself stepping down, feel yourself stepping down, one step for each number I count . . . and all you need to do is notice, just notice, how much more comfortable and relaxed you can feel at each step, as you go down the staircase . . . one step for each number that I count . . . the larger the number, the farther down the staircase . . . the farther down the staircase, the more comfortable you can feel . . . one step for each number . . . all right, you can begin to get ready . . . now, I'm going to begin . . . ONE . . . one step down the staircase . . . TWO . . . two steps down the staircase . . . that's fine . . . THREE . . . three steps down the staircase . . . and maybe you already notice how much more relaxed you can feel . . . I wonder if there are places in your body
that feel more relaxed than others ... perhaps your shoulders feel more relaxed than your neck ... perhaps your legs feel more relaxed than your arms ... I don't know, and it really doesn't matter ... all that matters is that you feel comfortable ... that's all ... FOUR ... four steps down the staircase, perhaps feeling already places in your body beginning to relax ... I wonder if the deep relaxing, restful heaviness in your forehead is already beginning to spread and flow ... down, across your eyes, down across your face, into your mouth and jaw ... down through your neck, deep, restful, heavy ... FIVE ... five steps down the staircase ... a quarter of the way down, and already beginning, perhaps, to really, really enjoy your relaxation and comfort ... SIX ... six steps down the staircase ... perhaps beginning to notice that the sounds which were distracting become less so ... that all the sounds you can hear become a part of your experience of comfort and relaxation ... anything you can notice becomes a part of your experience of comfort and relaxation ... SEVEN ... seven steps down the staircase ... that's fine ... perhaps noticing the heavy, restful, comfortably relaxing feeling spreading down into your shoulders, into your arms ... I wonder if you notice one arm feeling heavier than the other ... perhaps your left arm feels a bit heavier than your right ... perhaps your right arm feels heavier than your left ... I don't know, perhaps they both feel equally,
comfortably heavy . . . It really doesn't matter . . . just letting yourself become more and more aware of that comfortable heaviness . . . or is it a feeling of lightness? . . . I really don't know, and it really doesn't matter . . . EIGHT . . . eight steps down the staircase . . . perhaps noticing the tingling in your fingers . . . perhaps wondering about the fluttering of your heavy eyelids . . . NINE . . . nine steps down the staircase, breathing comfortably, slowly, and deeply . . . restful, noticing that heaviness really beginning to sink in, as you continue to notice the pleasant, restful, comfortable relaxation just spread through your body . . . TEN . . . ten steps down the staircase . . . halfway to the bottom of the staircase, wondering perhaps what might be happening, perhaps wondering if anything at all is happening . . . and yet, knowing that it really doesn't matter, feeling so pleasantly restful, just continuing to notice the growing, spreading, comfortable relaxation . . . ELEVEN . . . eleven steps down the staircase . . . noticing maybe that as you feel increasingly heavy, more and more comfortable, there's nothing to bother you, nothing to disturb you, as you become deeper and deeper relaxed . . . TWELVE . . . twelve steps down the staircase . . . I wonder if you notice how easily you can hear the sound of my voice . . . how easily you can understand the words I say . . . with nothing to bother, nothing to disturb . . . THIRTEEN . . . thirteen steps down the staircase, feeling more and more the real
Appendix E—continued

enjoyment of this relaxation and comfort . . . FOURTEEN . . .
fourteen steps down the staircase . . . noticing perhaps
the sinking, restful pleasantness as your body seems to just
sink down, deeper and deeper into the chair, with nothing
to bother, nothing to disturb . . . as though the chair
holds you, comfortably and warmly . . . FIFTEEN . . .
fifteen steps down the staircase . . . three-quarters of the
way down the staircase . . . deeper and deeper relaxed,
absolutely nothing at all to do . . . but just enjoy yourself
. . . SIXTEEN . . . sixteen steps down the staircase . . .
wondering perhaps what to experience at the bottom of the
staircase . . . and yet knowing how much more ready you already
feel to become deeper and deeper relaxed . . . more and more
comfortable, with nothing to bother, nothing to disturb . . .
SEVENTEEN . . . seventeen steps down the staircase . . .
closer and closer to the bottom, perhaps feeling the heaviness
in your arms and legs become even more clearly comfortable
. . . knowing that nothing really matters except your enjoy-
ment of your experience of comfortable relaxation, with
nothing to bother, nothing to disturb . . . EIGHTEEN . . .
eighteen steps down the staircase . . . almost to the bottom,
with nothing to bother, nothing to disturb, as you continue
to go deeper and deeper relaxed . . . heavy . . . comfortable
. . . restful . . . relaxed . . . nothing to do, no one to
please, no one to satisfy . . . just to notice how comfortable
and heavy you can feel, and continue to feel as you continue
to breathe, slowly and comfortably . . . restfully . . .
NINETEEN . . . nineteen steps down the staircase . . . almost
to the bottom of the staircase . . . nothing to bother,
nothing to disturb you as you continue to feel more and more
comfortable, more and more relaxed, noticing . . . and now
. . . TWENTY . . . bottom of the staircase . . . deeply,
deeply relaxed . . . deeper with every breath you take . . .
deeper relaxed with every breath you take.
(Here are given the suggestions and instructions appropriate
to the group.)

In a moment, I'm going to count from 20 to one . . . as
you know, I'd like you to feel yourself going back up the
steps . . . one step for each number . . . you'll have all
the time you need . . . after all, time is relative . . . feel
yourself slowly and comfortably going back up the steps, one
step for each number I count . . . when I reach 3, your eyes
will be almost ready to open . . . when I reach 2, they will
have opened . . . and, when I reach 1, you'll feel alert,
awake, refreshed . . . perhaps as though you'd had a nice
nap . . . alert, refreshed, comfortable . . . and even though
you'll still be very comfortable and relaxed, you'll be alert
and feeling very well . . . perhaps surprised, but feeling
very well . . . no hurry, you'll have all the time you need,
as you begin to go back up these restful steps . . . 20 . . .
19 . . . 18 . . . that's right, feel yourself going back up
the steps . . . ready to be surprised . . . 17 . . . 16 . . .
15 ... a quarter of the way back up, more and more alert
... no rush, plenty of time ... feel yourself becoming
more and more alert ... 14 ... 13 ... 12 ... 11 ...
10 ... halfway back up the stairs ... more and more alert
... comfortable but more and more alert ... 9 ... that's
right, feel yourself becoming more and more alert ... 8
... 7 ... 6 ... 5 ... 4 ... 3 ... that's right
... 2 ... and one ... that's right, wide awake, alert,
relaxed, refreshed ... that's fine.
Appendix F

Role-Playing Treatment Procedure

(Following group induction) Just enjoy your peaceful hypnosis for a few moments now . . . that's good . . . and now, if you genuinely desire to stop smoking, please focus your attention on the reasons that you want to become a nonsmoker. Think of as many reasons as you can. (Allow 60 seconds of silent thought). You will find now that, if you want, you can open your eyes and even speak without losing your comfortable and relaxed state of hypnosis . . . please open your eyes, continuing to feel restful and relaxed . . . I would like for each of us to share with the group one reason why you want to become a nonsmoker. (Go around the group, eliciting brief replies and finally "summing up" the major motivations stated by the members). Please close your eyes and return to the deep, peaceful relaxation . . . deeper and deeper with each breath . . . down to the very bottom of the staircase . . . that's right . . . and now, if you really want to stop smoking, please picture yourself some time in the future the way you want to be, a nonsmoker, feeling different about yourself because you are a nonsmoker. (Repeat the group discussion procedure). Once again, please close your eyes and return to a deeper state of hypnosis . . . feel the relaxation deepen with each breath . . . to the bottom of the staircase . . . that's right . . . now, if you truly wish to stop smoking, please
have a hypnotic dream about being a nonsmoker. The dream may be a sound, an image, a thought or night dream, but whatever it is will have something to do with being a nonsmoker. (Elicit brief descriptions of the S's experiences, elaborate on and reinforce positive feelings revealed in the dreams).

(At this point, procedure for the first and following sessions differ. For the initial session:) Please close your eyes and return to a deep state of hypnosis once again. Returning to the peaceful relaxation at the bottom of the staircase . . . deeper and deeper with each breath . . . and now, please allow yourself to imagine that you are driving a car down the road and in the distance you can see a fork in the road . . . the road to the right is the road to nonsmoking . . . the road to the left is the road to continued smoking . . . see the fork in the distance and notice the many differences between the two roads . . . notice which direction you turn. (Repeat the group discussion procedure, reinforcing those who fantasized turning to the right and encouraging those who turned to the left that we now are aware of their "subconscious resistances" to stopping smoking and thus will deal with those in future sessions.)

(For the following sessions:) Please close your eyes and return to a deep state of hypnosis once again. Returning to the peaceful relaxation at the bottom of the staircase . . . deeper and deeper with each breath . . . and now, please allow yourself to imagine a problem situation in
which you are tempted to smoke . . . notice where you are, what is happening around you and how you are feeling . . . please allow yourself to imagine . . . imagine yourself handling the problem situation as a nonsmoker . . . you have the ability to stop smoking and you have a choice . . . you have the ability to stop smoking and you have a choice.

(Repeat the group discussion procedure, with emphasis on reinforcing successful imagery rehearsal.)
Appendix G

Counterconditioning Treatment Procedure

(Following group induction) Just enjoy your peaceful hypnosis for a few moments now . . . that's good . . . and now, if you genuinely wish to stop smoking, please focus your attention on those things about smoking which give you the greatest pleasure . . . imagine yourself smoking and become aware of whatever is pleasing to you about smoking that cigarette . . . that's right . . . see yourself smoking . . . feel yourself smoking . . . let yourself fully experience the desire, the craving, the need for a cigarette . . . (Allow 60 seconds of silent thought) You will find now that, if you want, you can open your eyes and even speak without losing your comfortable and relaxed state of hypnosis . . . please open your eyes, continuing to feel restful and relaxed . . . I would like for each of us to share with the group one thing about smoking which gives you great pleasure. (Go around the group, eliciting brief replies and finally "summing up" the major points stated by the members.) Please close your eyes and return to the deep, peaceful relaxation . . . deeper and deeper with each breath . . . down to the very bottom of the staircase . . . that's right . . . once again, please allow yourself to experience the desire for a cigarette . . . imagine a time and place where your desire for smoking is the strongest . . . notice the desire for a
cigarette becoming stronger and stronger . . . imagine
holding the cigarette . . . smelling the cigarette . . .
lighting the cigarette . . . inhaling the smoke . . . the
taste of the cigarette . . . the feeling in your chest . . .
your need gets stronger with each passing moment . . . you
realize that this craving, this desire is what drives you
to smoke . . . driven by this feeling . . . controlled by
this feeling . . . your desire for smoking becomes stronger
and stronger . . . stronger and stronger . . . so strong that
you think you can't stand it . . . you need to relax . . .
and STOP, please allow your smoking images to fade as we go
deeper into a state of peaceful relaxation . . . the imagery
stops as you focus your attention on your breathing . . .
breathing slowly and deeply . . . deeper and deeper with each
breath . . . resting comfortably and going deeper relaxed
with each breath . . . that's right . . . deeper and deeper
. . . (continue deepening for five minutes)

Feeling so relaxed and calm . . . and now, please
visualize yourself involved in a physical activity that you
really like . . . it may be swimming, walking, skiing, or
any other physical activity that you really enjoy . . .
(Allow 60 seconds of silent thought) Feeling good . . .
feeling healthy . . . feeling proud of being a nonsmoker . . .
you have the ability to stop smoking and you have a choice
. . . you have the ability to stop smoking and you have a
choice. (Repeat group discussion procedure, with emphasis on altering the "deprivation reaction" and the feelings which make it difficult to quit smoking.)
Appendix H

Follow-up Data Form

Name: ____________________________

Date: ____________________________

Group: ____________________________

Currently smoking: ____yes   ____no

If yes, number of cigarettes smoked per day: ______

Length of time S has smoked this amount: ______

Reasons for starting smoking again: ________________________________

Number of times self-hypnosis used per day: ______

Problems (e.g., weight gain): ________________________________

Benefits (e.g., self-esteem): ________________________________

Estimated helpfulness of the treatment program:

0 10 20 30 40 50 60 70 80 90 100
(not at all) (very much so)

Most helpful aspect of the treatment program: ________________________________

Etc. comments: ________________________________
Appendix I

Role-playing

No  Yes

No

Yes

Counterconditioning

Figure 1. Basic Research Design: Counterconditioning and Role-playing treatment suggestions (present or absent).
Appendix J

**Group Means:**
Cigarettes/Day

Figure 2. Mean Daily Smoking Rates for Each Treatment Group at Seven Times of Assessment.
Appendix K

Table 1

Means and Standard Deviations of the Pretreatment Matching Variables for Each Treatment Group

<table>
<thead>
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<th></th>
<th>Cigarettes/Day Base Rate</th>
<th>Years Smoking</th>
<th>Previous Attempts to Stop</th>
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</tr>
<tr>
<td>RP</td>
<td>36.25 (15.09)</td>
<td>20.75 (16.40)</td>
<td>3.42 (3.94)</td>
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<tr>
<td>CC</td>
<td>30.72 (7.40)</td>
<td>20.73 (14.37)</td>
<td>3.09 (2.14)</td>
</tr>
<tr>
<td>B</td>
<td>33.07 (15.43)</td>
<td>14.36 (6.02)</td>
<td>2.50 (1.87)</td>
</tr>
<tr>
<td>r</td>
<td>30.38 (7.49)</td>
<td>19.38 (11.61)</td>
<td>3.08 (1.89)</td>
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</tbody>
</table>

RP = role-playing treatment group

CC = counterconditioning treatment group

B = "both" or combined treatment group

r = relaxation and support treatment group
Appendix L

Table 2

Means and Standard Deviations of the Percentage Reduction from Pretreatment Smoking Rates* for Each Treatment Group at Six Times of Assessment

<table>
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<th>Treatment</th>
<th>Session</th>
<th>Follow-up Month</th>
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<tr>
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<td>83.39</td>
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<td></td>
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<td>67.98</td>
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<td>(12.40)</td>
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* Pretreatment rate - current rate
  Pretreatment rate
Appendix M

Table 3

Summary of Analysis of Variance of Percentage Smoking Reduction as a Function of Role-Playing, Counterconditioning and Time of Assessment

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<th>MS</th>
<th>F</th>
<th>P</th>
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<td>4713.72</td>
<td>.82</td>
<td>.37</td>
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<tr>
<td>Counterconditioning (CC)</td>
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<td>3460.83</td>
<td>.60</td>
<td>.44</td>
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<td>RP X CC</td>
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<td>.86</td>
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<td>Error between</td>
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<td>Time (T)</td>
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<td>&lt; .001</td>
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<td>.37</td>
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<tr>
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<td>1197.10</td>
<td>3.25</td>
<td>.007</td>
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<tr>
<td>T X RP X CC</td>
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<td>.73</td>
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<td>Error within</td>
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<td>368.02</td>
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Appendix N

Table 4

Cell Means for Percentage Reduction Data: Time X CC

<table>
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<tr>
<th></th>
<th>Session 2</th>
<th>Session 3</th>
<th>Session 4</th>
<th>Follow-up 1</th>
<th>Follow-up 3</th>
<th>Follow-up 6</th>
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<tbody>
<tr>
<td>CC</td>
<td>80.17</td>
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<td>71.09</td>
<td>57.55</td>
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<td></td>
<td>(10.20)</td>
<td>(4.12)</td>
<td>(3.32)</td>
<td>(6.93)</td>
<td>(10.49)</td>
<td>(7.87)</td>
</tr>
<tr>
<td>Non-CC</td>
<td>88.20</td>
<td>71.18</td>
<td>67.18</td>
<td>46.21</td>
<td>38.16</td>
<td>35.48</td>
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<tr>
<td></td>
<td>(6.78)</td>
<td>(4.00)</td>
<td>(2.00)</td>
<td>(5.20)</td>
<td>(12.21)</td>
<td>(8.83)</td>
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CC = Counterconditioning
Non-CC = Noncounterconditioning
### Appendix O

#### Table 5

Means and Standard Deviations of the Group Abstinence Percentage for Each Treatment Group at Six Times of Assessment

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<th>Follow-up</th>
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<tr>
<td>RP</td>
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<td></td>
<td>(51.49)</td>
<td>(49.24)</td>
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<tr>
<td>CC</td>
<td>36.36</td>
<td>36.36</td>
</tr>
<tr>
<td></td>
<td>(50.45)</td>
<td>(50.45)</td>
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<tr>
<td>B</td>
<td>42.86</td>
<td>35.71</td>
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<tr>
<td></td>
<td>(51.36)</td>
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<tr>
<td>r</td>
<td>69.23</td>
<td>15.38</td>
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<tr>
<td></td>
<td>(48.04)</td>
<td>(37.55)</td>
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RP = role-playing treatment group  
CC = counterconditioning treatment group  
B = "both" or combined treatment group  
r = relaxation and support treatment group
### Table 6

Summary of Analysis of Variance of Group Abstinence Percentage as a Function of Role-Playing, Counterconditioning and Time of Assessment

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Role-playing (RP)</td>
<td>1</td>
<td>.36</td>
<td>.35</td>
<td>.55</td>
</tr>
<tr>
<td>Counterconditioning (CC)</td>
<td>1</td>
<td>1.49</td>
<td>1.46</td>
<td>.23</td>
</tr>
<tr>
<td>RP X CC</td>
<td>1</td>
<td>.02</td>
<td>.02</td>
<td>.89</td>
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<tr>
<td>Error between</td>
<td>46</td>
<td>1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (T)</td>
<td>5</td>
<td>.31</td>
<td>5.96</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>T X RP</td>
<td>5</td>
<td>.10</td>
<td>1.83</td>
<td>.11</td>
</tr>
<tr>
<td>T X CC</td>
<td>5</td>
<td>.31</td>
<td>5.93</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>T X RP X CC</td>
<td>5</td>
<td>.11</td>
<td>2.15</td>
<td>.06</td>
</tr>
<tr>
<td>Error within</td>
<td>230</td>
<td>.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix Q

Table 7

Cell Means for Percentage Abstinence Data: Time X CC

<table>
<thead>
<tr>
<th></th>
<th>Session</th>
<th></th>
<th>Follow-up Month</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>CC</td>
<td>39.61</td>
<td>36.04</td>
<td>39.61</td>
<td>39.61</td>
</tr>
<tr>
<td></td>
<td>(4.58)</td>
<td>(1.41)</td>
<td>(4.58)</td>
<td>(4.58)</td>
</tr>
<tr>
<td>Non-CC</td>
<td>55.45</td>
<td>24.31</td>
<td>24.31</td>
<td>12.18</td>
</tr>
<tr>
<td></td>
<td>(19.18)</td>
<td>(20.10)</td>
<td>(20.10)</td>
<td>(6.24)</td>
</tr>
</tbody>
</table>

CC = Counterconditioning
Non-CC = Noncounterconditioning
Appendix R

Table 8

Means and Standard Deviations of Demographic, Pretreatment and Group Climate Variables, Divided by Outcome at Six Months Follow-up

<table>
<thead>
<tr>
<th>Variable</th>
<th>Abstainers (N = 14)</th>
<th>Smokers (N = 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Age (16 to 70)</td>
<td>42.36</td>
<td>12.76</td>
</tr>
<tr>
<td>Sex (male = 1; female = 2)</td>
<td>1.57</td>
<td>.51</td>
</tr>
<tr>
<td>Education (9th or less = 1; h.s. grad. = 3; college grad. = 5)</td>
<td>3.36</td>
<td>1.15</td>
</tr>
<tr>
<td>Marital Status (divorced = 1; single = 2; married = 3)</td>
<td>2.35</td>
<td>.63</td>
</tr>
<tr>
<td>Years Smoking (1 to 50)</td>
<td>25.07</td>
<td>12.93</td>
</tr>
<tr>
<td>No. of quit attempts (0 to 5+)</td>
<td>2.50</td>
<td>1.51</td>
</tr>
<tr>
<td>Previous program (No = 0; yes = 1)</td>
<td>.36</td>
<td>.50</td>
</tr>
<tr>
<td>Health rating (poor = 1; good = 3; excellent = 5)</td>
<td>3.36</td>
<td>.93</td>
</tr>
<tr>
<td>Smoking-related problems (no = 0; yes = 1)</td>
<td>.50</td>
<td>.52</td>
</tr>
<tr>
<td>Reason for quitting (aesthetic = 1; cost = 2; health = 3; others = 4)</td>
<td>3.00</td>
<td>.39</td>
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</table>
### Appendix R—continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>**</th>
<th>**</th>
<th>Smokers</th>
<th>**</th>
<th>**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M</strong></td>
<td><strong>SD</strong></td>
<td><strong>M</strong></td>
<td><strong>SD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation rating (0 to 100)</td>
<td>87.86</td>
<td>15.28</td>
<td>82.78</td>
<td>15.23</td>
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<tr>
<td>Self-efficacy rating (0 to 100)</td>
<td>72.14</td>
<td>25.17</td>
<td>66.67</td>
<td>20.42</td>
<td></td>
</tr>
<tr>
<td>Hypnotic susceptibility (5 to 12)</td>
<td>8.07</td>
<td>2.27</td>
<td>8.31</td>
<td>1.85</td>
<td></td>
</tr>
<tr>
<td>Reasons for Smoking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stimulation (3 to 15)</td>
<td>10.07</td>
<td>3.54</td>
<td>7.67</td>
<td>2.30</td>
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</tr>
<tr>
<td>Handling (3 to 15)</td>
<td>5.93</td>
<td>2.53</td>
<td>6.28</td>
<td>2.20</td>
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<tr>
<td>Relaxation (3 to 15)</td>
<td>11.93</td>
<td>2.87</td>
<td>11.14</td>
<td>2.14</td>
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<tr>
<td>Crutch (3 to 15)</td>
<td>13.36</td>
<td>2.27</td>
<td>11.69</td>
<td>2.68</td>
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<tr>
<td>Craving (3 to 15)</td>
<td>12.07</td>
<td>2.62</td>
<td>11.64</td>
<td>2.62</td>
<td></td>
</tr>
<tr>
<td>Habit (3 to 15)</td>
<td>9.43</td>
<td>2.85</td>
<td>7.42</td>
<td>2.26</td>
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<tr>
<td>Smoking Base rate (avg. cigarettes/day)</td>
<td>39.21</td>
<td>16.23</td>
<td>30.06</td>
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<tr>
<td>Session Attendance (1 to 4)</td>
<td>3.50</td>
<td>.76</td>
<td>2.94</td>
<td>1.01</td>
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<tr>
<td>Group Climate Factors</td>
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<td></td>
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<tr>
<td>Engagement (5 to 35)</td>
<td>24.43</td>
<td>5.61</td>
<td>26.19</td>
<td>4.53</td>
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</tr>
<tr>
<td>Avoidance (4 to 28)</td>
<td>14.00</td>
<td>3.33</td>
<td>12.44</td>
<td>3.41</td>
<td></td>
</tr>
<tr>
<td>Conflict (2 to 14)</td>
<td>2.43</td>
<td>.76</td>
<td>2.42</td>
<td>.81</td>
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Appendix S

Table 9

Means and Standard Deviations of the Most Significant Predictor Variables for Each Treatment Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Age</th>
<th>Stimulation Score</th>
<th>No. of Ss with a smoking-related problem</th>
</tr>
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<tr>
<td>RP</td>
<td>37.08</td>
<td>7.33</td>
<td>3</td>
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<tr>
<td></td>
<td>(16.94)</td>
<td>(2.84)</td>
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</tr>
<tr>
<td>CC</td>
<td>36.82</td>
<td>8.36</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(14.95)</td>
<td>(3.36)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>30.86</td>
<td>9.35</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(7.64)</td>
<td>(3.67)</td>
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</tr>
<tr>
<td>r</td>
<td>36.85</td>
<td>8.15</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(10.85)</td>
<td>(3.06)</td>
<td></td>
</tr>
</tbody>
</table>

RP = role-playing treatment group
CC = counterconditioning treatment group
B = "both" or combined treatment group
r = relaxation and support treatment group
Appendix T

Table 10

Number of Treatment Sessions Attended by the Subjects in Each Treatment Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of Sessions Attended</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>RP</td>
<td>2</td>
</tr>
<tr>
<td>CC</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
</tr>
<tr>
<td>r</td>
<td>0</td>
</tr>
<tr>
<td>M</td>
<td>3</td>
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</table>
References


