A COMPARISON OF BEHAVIORAL THERAPY AND CONTEXTUAL THERAPY
FOR THE TREATMENT OF OVERWEIGHT

THESIS

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By

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A COMPARISON OF BEHAVIORAL THERAPY AND CONTEXTUAL THERAPY FOR THE TREATMENT OF OVERWEIGHT

The habitual overeating that results in obesity has intrigued many investigators. Kaplan and Kaplan (1957) reviewed the psychoanalytic literature and concluded that the overweight ate to allay anxiety. Bruch (1961), through her work with a clinical population, began to develop what later became known as the externality hypothesis. While Bruch viewed the struggle with overweight as a reflection of difficulties in developing autonomy and a sense of self, her hypothesis focused on eating behaviors which appeared to be primarily in response to external cues rather than internal, physiological ones. Schachter (1971) found nothing in his study of the interpretation of internal states to indicate that overweight subjects ate to allay anxiety as suggested by Kaplan & Kaplan (1957). He concluded that fat people tended to ignore bodily sensations. As a result, the externality hypothesis, supported by Schachter's work, provides much of the theoretical framework and rationale for the behavioral treatment of obesity; that is, eating behaviors are learned, and fat people--who are believed to eat differently than slim people--learn to eat in response to a wide variety of cues that have nothing to do with physiological hunger. Thus, overeating produces overweight.
The purpose of the present study is to compare a "traditional" behavioral therapy approach (based on self-control techniques) with a previously unresearched "contextual therapy" for the treatment of overweight. The remainder of this chapter is devoted to a discussion of a variety of relevant behavioral techniques, an evaluation of them, and a discussion of a contextual model for the treatment of overweight.

Review of the Behavioral Literature

This review of the behavioral literature on the treatment of obesity is divided into sections covering the development and evaluation of various behavior therapy techniques. Questions regarding the assumptions made in the behavioral treatment of obesity are also raised.

In 1962, Ferster, Nurnberger, and Levitt demonstrated the use of a stimulus-control based treatment for obesity. Penick (1971) later reported that these subjects lost between 5 and 20 pounds. Stuart (1967) refined the approach of Ferster et al. and put together a training package which has served as the model for many subsequent programs. His program was designed to (a) identify stimuli that lead to overeating, (b) use stimulus-control procedures to confine eating to specified places, (c) have the client chew slowly and be aware of eating, and (d) replace snacking with enjoyable activities such as hobbies. Stuart also provided "as needed" follow-up sessions for his individual subjects.
Those who stayed with the program for one year lost an average of almost 40 pounds. This is by far the most impressive set of results reported in the literature for outpatient treatments to date.

Since the early work of Stuart and of Ferster and his associates, a wide variety of behavioral techniques have been developed for use in the treatment of obesity. Although most of them seem plausible and all are consistent with behavioral theory, they have met with varying degrees of success. These techniques include self-control methods, therapist-controlled reinforcement, aversion therapy, and complex self-control programs combined with exercise and drug therapy.

**Self-Control Techniques.** Self-control techniques are a mainstay in most behavioral programs (Rimm & Masters, 1979) because fairly consistent results have been attained with them (Abramson, 1973, 1977; Wilson & Brownell, 1980). Basically three types of self-control programs have been developed: complex self-control, simple self-control, and bibliotherapy.

The purpose of a complex self-control program is to establish control over eating using environmental management to eliminate or suppress cues associated with undesirable habits while strengthening desirable behaviors using self-reinforcement. Stuart's prototypical program can be described as a complex self-control program. Other complex self-control programs (discussed below) include covert
sensitization, coverant control, and contingency contracting. A self-control program can be designed to incorporate almost any other set of techniques.

A simple self-control technique described by Fowler, Fordyce, Boyd, and Masock (1972) requires the subject to count every mouthful of food and gradually reduce the number of bites after a base rate has been established. Both simple and complex self-control procedures have been reported as being more effective than placebo or non-treatment groups, but in terms of weight loss and short-term maintenance, there was no difference between the two complexities of treatment (Abramson, 1977).

Clients have been given bibliotherapy with manuals describing self-control techniques. In the short run, this approach has been used successfully for the control of eating with little or no therapist contact. Long-term results are not presently available (Abramson, 1977).

**Therapist-Controlled Reinforcement.** The control of reinforcers by the therapist has been demonstrated to be effective with individuals in token economies in institutional settings (Bernard, 1968; Upper & Newton, 1971; both cited by Abramson, 1973). Some evidence exists that "payment for pounds lost" or partial refund of deposits for meeting contingencies may be useful in producing weight loss (Abramson, 1973). The surrender of personal possessions for later return as reinforcers (Mann, 1972 cited by Abramson,
1973) under a contractual arrangement with a therapist has been used successfully, also. Permanent loss of possessions for failing to meet program requirements seems to have been a crucial part of this program. Although therapist-controlled reinforcement can be effective in promoting program adherence, the long-term effects of this type of treatment are not known, and one study reviewed by Abramson (1973) suggests that weight may be rapidly regained when the artificial contingencies are withdrawn.

**Aversion Therapy.** Several forms of aversion therapy have been developed with the goal of having clients avoid certain foods. Abramson has written two comprehensive reviews (1973, 1977) describing the use of aversion techniques in weight control. The techniques he describes are covert sensitization, coverant conditioning, and counter-conditioning.

In 1966, Cautela (cited by Abramson, 1973) first described a rationale for covert sensitization and procedures for its use in the treatment of obesity. The client is first taught to relax, then the therapist vividly describes a scene in which the client approaches target foods, becomes nauseous, and vomits. Alternately, scenes are described in which the target foods are approached, the client feels nauseous, retreats, and experiences relief. While Janda and Rimm (1972), and Manno and Marston (1972) found positive results using covert sensitization, Lick and Bootzin (1971),
and Meynen (1970) reported no significant differences between covert sensitization and control conditions. Foreyt and Hagen (1973, whose study was replicated by Diament & Wilson, 1975; both studies cited by Abramson, 1977) concluded that attention, suggestion, and other non-specific factors may have been responsible for any beneficial effects that were obtained. Although covert sensitization may be useful in some clinical situations, its beneficial effects could be due to non-specific treatment effects rather than aversive conditioning per se.

Covert-operant or "coverant" conditioning, based on the Premack principle (described by Homme, 1965), uses a high probability behavior to reinforce a low probability thought which is incompatible with overeating. Coverant conditioning has yet to be demonstrated as being effective in the treatment of obesity (Horan & Johnson, 1971; Tyler & Straughan, 1970; both cited by Abramson, 1977).

Counter-conditioning, using electric shock, noxious odors, or other aversive stimuli (Abramson, 1973, 1977), attempts to substitute an unpleasant emotional response for a formerly pleasurable or neutral response associated with eating a target food. Despite enthusiasm by early investigators, the results have been equivocal at best. There is little to warrant the general inclusion of aversive techniques in a weight-reduction program.
Complex Self-Control Programs Incorporating Physical Exercise. Physical activity has been emphasized by several authors (Brownell, 1982; Dahlkoetter, Callahan, & Linton, 1979; and Stuart, 1971) as having an important role in reducing and maintaining weight. It has been investigated in only a few complex self-control programs with good results (Abramson, 1977; Dahlkoetter, Callahan & Linton, 1979). Noting that obese adults, but not obese children, appear to be less active than their non-obese peers, Bennett and Gurin (1982) suggested that inactivity may be a consequence of obesity rather than a cause of it. They also noted that moderate exercise has the following benefits to recommend it in a weight reduction program: (a) It increases energy expenditure ("burning calories"); (b) it improves psychological and physiological functioning; (c) it hastens weight loss since weight lost through exercise may exceed what would be expected through calculations of the expenditure of calories alone; (d) it can decrease appetite and basal metabolism; and (e) it reduces the loss of lean tissue when dieting. A typical problem with exercise programs for the obese has been a high rate of attrition. Brownell (1982) suggests that contracting, reinforcement, and social factors might be used to shape participation in an exercise program.

Complex Self-Control Programs Incorporating Drug Therapy. Craighead, Stunkard, and O'Brien (1981 cited by
Brownell, 1982) investigated the use of behavior therapy (i.e. a complex self-control program), use of an appetite suppressant (fenfluramine), and combined therapy. At a one-year follow-up, the investigators found that the combined-treatment subjects' weight had rebounded as strongly as that of subjects who received only the drug. Brownell and Stunkard (1978) found that adding couples training to behavior therapy and fenfluramine treatments did not surpass weight losses produced in the drug-treatment condition. The use of appetite suppressants has not had promising results.

Summary and Evaluation of Behavioral Approaches. At present, over one hundred controlled studies have been published on behavioral treatments of obesity. It is striking to note that Stuart's early results have never been equaled or surpassed. Generally the following conclusions can be drawn about the use of behavior therapy: Behavioral interventions typically lead to consistent, modest weight losses, which may not be clinically significant. Losses are usually in the range of one to two pounds per week, averaging about eleven pounds lost for a typical ten to twelve week program. Behavioral treatments have distinct advantages in that the treatment period is usually short, patients are often seen in groups, treatment tends not to be very costly, and treatment tends to improve psychological functioning. Program attrition tends to be low, particularly when refundable deposits are used (Brownell, 1982).
Considerable variability in weight loss and maintenance exists among clients that is not accounted for by identified variables (Jeffrey, Wing, & Stunkard, 1978). These findings are remarkably stable in a variety of programs, in many locations, and with a variety of therapist characteristics (Wilson & Brownell, 1980). The durability of weight loss through behavior therapy is ambiguous (Brownell & Wilson, 1980; Jeffrey, Wing, & Stunkard, 1978; Stunkard & Penick, 1979). Three studies cited by Stunkard and Penick suggest that fading reinforcement contingencies and "booster sessions" have not significantly improved the maintenance of weight loss. Perhaps only 25 per cent of clients continue to lose weight after treatment (Wilson & Brownell, 1980). The longer patients are followed the greater variability exists. In studies with one- to five-year follow-ups, clinically important weight losses have not been well maintained. Several studies even showed a paradoxical effect in which subjects who lost weight during treatment regained it by follow-up, and those who did not lose weight during treatment lost weight during the follow-up period! (Stunkark & Penick, 1979). Comparison of long-term treatment effects with other approaches to weight loss is not yet possible due to a lack of data on other approaches (Wilson & Brownell, 1980).

Recently Stunkard stated:

I think behavior therapy has run its course, I really do. I just don't think its clinical usefulness is going
to improve much at all; it's leveled off at a point of giving modest improvement. As an analogy, if we're on a journey of a hundred miles, and we had gone five miles, then behavior therapy goes another five miles. That doubles the effectiveness, but we've still got a long ways to go (Bennett & Gurin, 1982, p. 57).

A growing body of research suggests that early assumptions in the behavioral model about the differences in obese and normal weight subjects were erroneous. In a 1980 review, Judith Rodin, the chief proponent of the externality hypothesis of obesity, noted that it has not received extensive confirmation. People who are highly responsive to external eating cues exist in all weight categories and behavior theory does not account for why all people do not become stimulus bound to foods. This internal-external distinction is apparently too simple to differentiate obese from normal-weight individuals. Mahoney (1975) found that fat and slim subjects ate at the same pace in the laboratory and left similar amounts on their plates. Coll, Myer, and Stunkard (1979) replicated these findings in a fast-food restaurant. Kissileff, Jordan, and Levitz (1978) found that fat and thin people ate under similar conditions at home, including the fact that people in both groups often ate when they were only mildly hungry. Furthermore, several researchers (Moore, Stunkard, & Srole, 1962; Stuart & Davis, 1975; Weinberg, Mendelson, & Stunkard, 1961) have failed to
find any practical personality differences between obese and normal-weight people. DSM-III states that "simple obesity . . . is not generally associated with any distinct psychological or behavioral syndrome" (American Psychiatric Association, 1980, p. 67).

Others (Brownell, 1982; Lebow, 1981; Wing, & Jeffery, 1979) have noted that people vary widely in their response to behavior therapy, and that no one seems to know why some subjects succeed in losing weight where others fail. Brownell and Stunkard (1978) observed that some people lose weight regardless of whether or not they changed prescribed behaviors. In light of these findings, it is not surprising that Ferguson concluded, "the theoretical basis for behavioral programs is gone. . . . Although people lose weight, it's not entirely clear why they're losing weight" (1979, cited in Bennett and Gruin, 1982, p. 56). He suggests that positive expectation may play an important role.

Bennett and Gurin, who argue for both Nesbitt's notion of a natural "setpoint" regulating body fatness and the positive role of exercise in changing setpoint, suggest that:

Fatness, in most cases, is not the result of deep-seated psychological conflicts or maladaptive "eating behaviors"; usually it is just a biological fact. Fat people suffer because they live in a culture that derides their bodies, encourages them to starve
themselves, and declares that character flaws have made them fat . . . .

[Although] Fatness is usually not a disease, . . . .

[our culture has] come to treat it as one (p. 58, 1982).

Self-Concept and Weight Loss

Bruch (1973) and Rubin (1970) have observed that some overweight people, through persistent dieting, have been able to reduce their weight so they have a slim body but they continue to feel and act as if they are still obese. Such people may be said to have mastered the condition of overweight, but still consider that their weight is a problem. In terms of the contextual model, such persons may be said to be continuing to operate from a context of "being fat." Likewise, anorexic and bulimic patients may consider themselves to "have a weight problem" regardless of the objective condition of their bodies. Since previous assumptions regarding the differences between overweight and normal-weight persons have not been well supported by the empirical evidence, perhaps a different approach to the treatment of obesity is in order. Such an approach is suggested by the contextual model. Not only is there little behavioral literature related to self-concept and weight loss, there is no corresponding contextual literature either. It seemed likely that subject's self concept could change during the course of the present study.
Review of the Contextual Literature

Recently, a fresh approach to weight management has been introduced (Faschinbauer, 1982; Schwartz, 1982a & b) which may hold the key to weight loss and long-term maintenance. To date, no experimental literature has addressed the use of the contextual model. The purpose of contextual therapy, as performed in the present study, is for individuals (in a group setting) to discover the truth about their weight, and to develop a context, or way of holding that knowledge, in a way that supports their well-being and reduces the perceived severity of the problem of "being overweight" (whether or not weight loss is "clinically significant"). This approach is based on a contextual model generated jointly by Erhard (1977) and Shaw (Shaw & Regnier, 1982). In this model, the existence of three domains of knowledge are proposed: context, process, and content. The training procedures and content used in the present study were developed by Schwartz (1982).

"Context" is a domain of knowledge created by making distinctions. The act of distinguishing something, therefore, brings that thing into being. Context does not persist, but rather is re-created by making distinctions. A context can be considered as a way of holding (or interpreting) other information (i.e. content). A context brings forth process which brings forth content.
"Process" is "a natural phenomenon marked by gradual changes that lead toward a particular result . . . . A series of actions or operations leading to an end" (Webster, 1969, p. 678). Doing something, or experiencing something, in the present (existential) moment falls into the domain of knowledge called process (Erhard, 1982). Process accounts for the time delay between the creation of a context and the manifestation of the concrete results (content).

"Content" is "a part, element, or complex of parts" (Webster, 1969, p. 180). Knowledge in this domain is "conceptual" or "factual." This is also the domain of positions, values, judgements, evidence, reasons, tangible things, and most of what is called "real" in our society.

Erhard (1980, 1982) notes that many people treat experience (domain of process) and the memory of an experience (domain of content) as the same thing. Actually, one can only approximately describe what one was experiencing in a past moment. By the time an experience has been labeled, it is a memory of a prior instantaneous experience, and no longer exists as a pure experience. As a result, experience (process) always devolves into content. People also have a marked tendency to use past experience (content) as a basis for generalizing (i.e. creating a context), which creates new experiences that are consistent with their past. Thus in the "normal" course of events, people's contexts are determined by their (previous) contents. Implicit in
Erhard's contextual model are the assumptions that thought is creative and that one can have a choice in determining the content in one's life by consciously choosing contexts (or working premises) that are consistent with the results one desires.

Before proceeding to a discussion of how the contextual model can be used in weight management, a simpler illustration of the relationship among the domains of context, process, and content is in order. If a woman wants to "be a ballerina," common knowledge would dictate that she must first have slippers, a tutu, tights, lessons (domain of content), then she must practice many years (domain of process), and perhaps someday she will get to "be a ballerina" (domain of context). This common knowledge route probably produces few ballerinas, as it is filled with such struggle and effort that many aspirants let their "dream" of being a ballerina fall by the wayside. "Someday" never arrives. However, an approach beginning at the level of context (making the distinction, or declaration, that "I am a ballerina"—without any supporting evidence), and going through the domain of process (doing what ballerinas do, i.e. taking lessons and practicing) and ending with the domain of content (having what ballerinas have, i.e., tutu's and slippers, as well as the acknowledgement and agreement from others that one is, "in fact," a ballerina) casts a wholly different light on the large picture (or as Erhard terms it:
"transforms the context" from one of "struggle and effort" to one of "natural knowing" or "coming from the point of view of already being a ballerina"). Judgements of events as "successes" and "failures" can then be seen by the performer as simply complementary—not as contradictory. Jerry Eskow, chairman of the drama department at the Bronx High School of Performing Arts put it this way:

Talent is all around us, but the trick is to identify it and then help the students to see themselves as talented entities rather than as street kids. Most schools see a student as an empty vessel to fill with knowledge. . . . Here, the actor or dancer or musician already exists, and our job is to peel away the layers preventing that professional from emerging (Whittemore, 1982, p. 9).

An intentionally created context may appear to contradict a consensually valid "reality." Assumptions, however do not necessarily have to exist on the basis of what is believed to be "true." They can be viewed as working premises. The value of assumptions lies not in their supposed truth value, but rather in their power to bring forth the desired results.

To date, traditional psychology (experimental, physiological, behavioral, analytic, etc.) has not addressed the domain of context at all. Humanistic psychology has addressed the domain of process (experience), and some of the
transpersonal psychologies are beginning to address the domain of context from "the bottom up," i.e. from content and process. The contextual approach addresses the matter "from the top down--from the level of context" (E. Gurowitz, personal communication, August 9, 1982). In light of the overall results obtained in treating obesity with previous medical and traditional psychological approaches, a breakthrough in this area is clearly desirable.

Using the contextual model, Schwartz (1982a & b) proposes training overweight people to (a) intentionally create a context for themselves of "being a naturally thin person," then (b) have them "do what naturally thin people do" from the point of view of already being a naturally thin person (he lists four principles as guides to eating which he gleaned from interviews with naturally thin people), in order to (c) get the result of "having a naturally thin body." He also proposes acknowledging that one may have a naturally comfortable weight (a la Nesbitt's setpoint theory) which may or may not be consistent with one's expectation of what one's weight "should be."

The contextual model might be briefly summarized as: creation of context (a way of being) ===> process (doing or experiencing) ===> having results. The re-creation of the context of "being a naturally thin person" may be the long-sought key to relatively effortless achievement and long-term maintenance of target weight.
Purpose of the Present Study

The purpose of the present study is to compare weight losses achieved in a complex self-control program (which focuses on modifying food-related and eating behaviors) with a newly developed and previously unresearched contextual approach (which addresses the issue of "being overweight" and presents a method for reducing weight based on the way naturally thin people eat). A highly-credible placebo group was used to control for the effects of attention, expectation, passage of time, and uncontrolled fluctuations in weight. A related question of interest is: Which of the therapies under investigation has the most impact on reducing the perceived severity of the problem of being overweight.

Hypotheses

A. Both the behavioral and contextual groups are expected to lose more weight than the control group during the period between the end of treatment and follow-up.

B. Between the end of treatment and follow-up, the contextual therapy group and the behavioral group are expected to show equivalent weight losses.

C. Self-efficacy ratings following training are expected to improve across trials for the behavioral and contextual groups, but not necessarily for the placebo group.

D. Since the contextual treatment is aimed at dealing with subjects' perception of the problem of being overweight at the end of treatment the contextual group is expected to
be more effective than the behavioral or placebo groups in reducing the perceived severity of the problem of being overweight.

**Significance of the Study**

While approximately 300 contextual therapists have been trained (Shaw & Regnier, 1982), there is little literature relating to contextual therapy, and no experimental literature on contextual therapy exists. If contextual therapy is to be accepted by the psychotherapeutic community at large, it seems likely that it must demonstrate its value within currently accepted research methodology. This is the first experimental study to make use of a contextual approach to therapy, and as such, it may assist contextual therapists in formulating future research projects.

The contextual approach used in the present study emphasises not only weight loss, but resolving the issue of "being overweight." Previous approaches to weight loss have not addressed this issue. If the contextual approach is successful, it may solve the problem of long-term maintenance of target weight as well as reduce the significance of having weight as a problem for the individual. Enhanced self-esteem, regardless of weight, may be another positive outcome. The treatment might be extended to individuals who consider that they are overweight and who manifest eating disorders such as bulimia and anorexia nervosa. When individuals no longer consider their weight to be a problem,
they can be free to use their energies in achieving satisfaction in other areas of life. This treatment could be a breakthrough in the treatment of eating disorders.

Method

The population of interest for the present study was comprised of healthy, non-pregnant women from the general population, who considered that they had a weight problem that was primarily due to overeating and/or lack of exercise (i.e. exogenous obesity).

Subjects

Non-pregnant women between the ages of 18 and 45 were selected based on the following criteria: each subject acknowledged (first by telephone interview, then by signing the form in Appendix B) that she (a) wanted to lose at least 15 pounds, (b) was not taking medications that would alter her weight (such as diuretics, appetite suppressants, or steroids), and (c) was volunteering to participate in an experimental program to learn a method of controlling her weight.

Subjects further acknowledged (on the form in Appendix B) that they believed their overweight was due to overeating and/or lack of exercise, and not due to a medical disorder, and that they considered themselves to be in good physical and mental health. (Subjects were not accepted if they acknowledged receiving inpatient psychiatric care in the past two years. Several had received outpatient services for non-
psychotic disorders.) Thirty-eight subjects were selected for the study. They ranged in age from 18.25 to 44.53 years ($M = 34.13; SD = 7.77$), and had estimated body fat contents ranging from 19.39 to 45.43 percent ($M = 35.62; SD = 6.21$). Levels of education ranged from 10 to 18 years ($M = 13.79; SD = 2.02$), and all but two women reported working outside the home.

**Design**

The present study involved two treatment groups (behavioral and contextual therapy) and a "Subliminal Persuasion" attention-control placebo group in an analysis of variance with repeated measures (or two-factor ANOVA) design (Winer, 1971). One-way analyses of variance were used for selected applications. The placebo group was used to control for the credibility of treatment rationale, passage of time, and experimentally uncontrolled variations in weight.

**Materials**

A clinical beam balance was used to measure each subject's height (to the nearest 6.4 mm) and weight (to the nearest .11 kg). All training sessions were conducted in a 3.35 by 5.48 m classroom, with a sufficient number of chairs for subjects. A flipchart and felt markers were used by the experimenter to make class notes. A tall stool was present for the experimenter's use and a music stand supported the lesson plans. For the Subliminal Persuasion (control) group, a tachistoscopic shutter (Lafayette, Model 43015) was
attached to the lens of a Kodak Carousel slide projector. The shutter was set at 1/125 second exposure and was triggered with a 30 mm remote release plunger. Slides \( N = 160 \) which had no content judged as being relevant to dieting, exercising, or weight loss were shown to the subliminal persuasion group. Some of the slides depicted figures from an introductory statistics course, while others were obtained from the collections of the experimenter's acquaintances. A few selected slides were out of focus or very dark. Slides were projected on a 1.2 by 1.2 m portable screen. A stopwatch was used to time the interval between tachistoscopic presentations of slides.

Informed consent (see Appendix A) was obtained from each subject prior to the first assessment. Subjects acknowledged that they met the qualifications to participate in the study by signing the Identification Sheet (in Appendix B). Physical measurements were recorded on the form in Appendix C.

The following pencil-and-paper self-report instruments were administered to each subject during each of the three assessments:

A) An experimenter-designed questionnaire (see Appendix D) was used to collect demographic data, information descriptive of the subject's treatment for physical and emotional disorders over the past two years, current drug usage, perception of weight problem, estimates of adherence
to four principles listed by Schwartz (1982) as being descriptive of the way naturally thin people eat, and estimates of typical hunger ratings before and after meals.

B) The Self-Esteem Scale (Rosenberg, 1965, see Appendix E) was used as a unidimensional measure of self acceptance. It contained ten statements which were rated on a four-point scale. It was labeled "E Scale" when presented to subjects.

C) The Body Cathexis Scale (Jourard & Secord, 1953 see Appendix F) was used to measure another aspect of self esteem: satisfaction with aspects of one's body and physical characteristics. Its 41 items were rated on a five-point scale. When presented to subjects, it was labeled "BC Scale."

D) Credibility ratings of the treatment rationales were assessed with three questions adapted from studies cited by Kazdin and Wilcoxon, (1976, see Appendix G). Subjects rated only the rationale for their assigned group.

E) Self-efficacy ratings (after Bandura, 1977, cited in Rimm & Masters, 1979; see Appendix H) were recorded on three ten-point rating scales.

Procedure

To register for the experiment, subjects called a telephone number listed in a personal classified advertisement (see Appendix I) which was run in two Dallas newspapers. They were screened for eligibility and were told they would receive one of three experimental training
procedures (which were psychological in nature) for reducing weight. Random assignment was achieved by having subjects register classes by day and time rather than by group name. They were not told to which training group they had been assigned until the beginning of their first training session.

Subjects filled out Informed Consent forms (Appendix A) and Identification Sheets (Appendix B) prior to the first assessment. A $30 refundable deposit (intended to reduce attrition) was collected from each subject by the end of the first assessment, and returned to the subject at the end of the third assessment provided she had attended all sessions.

Assessments were conducted one week prior to the first training session, two weeks after the training ended, and at ten weeks following training. During the assessment sessions, subjects filled out questionnaires (Appendices D through H), and were weighed.

The training phase consisted of four weekly sessions of three hours each. One 15-minute break was taken approximately halfway through each session. A female professional trainer provided logistical support (taking attendance, distributing and collecting forms, maintaining a comfortable temperature in the room, etc.) and critiqued the experimenter's presentation outside of the sessions.

Subjects were distributed to groups as follows: "Subliminal Persuasion," n = 13; Behavioral Therapy, n = 12; Contextual Therapy, n = 14. Twelve subjects dropped out of the study
before its completion, leaving 9, 7, and 11 subjects \((N = 27)\) in the respective groups. Treatment rationales were prepared for the three groups using the Fog Index (Gunning, 1952) to equate length \((M = 142.33 \text{ words, } SD = 19.50)\) and grade reading level \((M = 9.17, SD = 0.71)\). Previous studies using credibility ratings have not reported using this procedure.

The experimenter has had six years of training and experience in the use of behavior modification, and has participated in the following contextually-oriented seminars: Erhard Seminar Training (60 hours in June 1978), Mastry: a context for the practice of psychotherapy (60 hours, Shaw & Regnier, 1982), and the Diets Don't Work Seminar (12 hours, Schwartz, 1982). Throughout the course of the study, the experimenter assumed the attitude that subjects could lose weight under any of the conditions, and this was stated to the subjects as a possibility prior to the first assessment.

The Subliminal Persuasion (SP) group was designed to be an equally-credible placebo control group. Subjects were given a training rationale based on changing their food selection and eating patterns by subliminally changing their attitudes. They received training in progressive relaxation (Jacobson, 1938) and cue-controlled relaxation (Russell & Sipich, 1973) procedures, then were shown tachistoscopically presented slides at twenty-second intervals for four 20-minute periods per training session. There were periods when subjects discussed how they felt they were being affected by
the presentation as well as changes they noticed in their eating habits, attitudes, and weight. Procedures were based on a control group used by Marcia, Rubin, and Efran (1969).

In all groups a short discussion on nutrition (the four food groups) and exercise was held during the last training session. This discussion was included in the Subliminal Persuasion group because the material was included in both the Behavioral and Contextual groups.

The Behavior Therapy (BT) group received training in a "traditional" behavior-modification approach to self-management of weight. Techniques taught included: self-monitoring of eating behaviors and amounts of foods consumed, recording data, identifying and controlling stimuli which occur prior to eating, and self-reinforcement for performance of target behaviors that are consistent with losing weight and incompatible with overeating. No aversive procedures were employed or taught. The sourcebook for lesson plans was Behavior Therapy for Weight Control: A Treatment Manual (Brownell, 1979).

Subjects in the Contextual Therapy group (CT), using coaching and introspection, reviewed their histories to discover what training they had received and what they believed about food, eating, and weight; what benefits they anticipated from being thinner as well as the benefits they receive from being overweight; and what considerations they had that have kept them from losing weight. They were taught
how naturally slim people eat (according to Schwartz, 1982a & b) and received brief skills-training regarding goal setting, risk evaluation, and the use of affirmations within the contextual model. Reasons were discussed for remaining overweight and fully accepting one's self "as is." The goal of treatment was for subjects to create a paradigm shift from "being fat" to being satisfied with one's self regardless of weight. The sourcebook for lesson plans was *Diets Don't Work* (Schwartz, 1982a).

The data were punched on cards and analysed on the National Advanced Systems AS/5000 computer at North Texas State University using the BMDP Statistical Software (Dixon, 1981).

**Results**

It was assumed that following random assignment to groups prior to training, the groups would not differ from each other on the dependent measures or the demographic variables (age and education level). This assumption was tested with a series of one-way analyses of variance and was confirmed (at \( p < .05 \)) with one exception which is explained in the next paragraph. The complete results are shown in Table 1 in Appendix J. Table 1 shows that there were no significant differences among groups with regard to age, level of education, or how subjects responded to questions regarding the perceived severity of their weight problem, their willingness to have their weight problem solved, or sum
of scores on Swartz's four principles to use in eating.
(Note: The following entries on the experimenter-designed questionnaire: "Severity of Problem," "Willingness to Solve Problem," and "Sum of Principles" correspond to questions 24, 26, and the sum of the answers for questions 27 through 30.)
Scores on the Self-Esteem and Body Cathexis scales did not differ significantly among groups. With the exception of willingness to recommend the treatment to a friend (Rationale question 3), answers to the three questions on each of the treatment rationales and self-efficacy scales did not differ significantly.

Answers to Rationale question 3 (i.e. "Knowing what you know right now, would you recommend this treatment to a friend?") were found to differ significantly (at $p < .05$) among the groups prior to treatment (See Table 2). Group means (and corresponding SDs) were: SP = 1.00, (0.0); BT = 1.14, (0.38); CT = 1.55, (0.52). Post-hoc $t$-tests on differences between all pairs of means were computed using the Bonferroni procedure with the family-wise error rate protected at $p < .05$ (cited in Games, 1971). A significant difference was obtained between the control group (SP) and the contextual group (CT)($t = -3.46$, $p = .006$). The behavioral (BT) and contextual (CT) groups were not significantly different from each other at $p < .05$.
Examination of the raw data indicated that the control subjects (SP), having only read the treatment rationale prior
to training, were unanimously willing to recommend their proposed treatment to a friend.

Table 2

Summary of One-Way Analysis of Variance for Willingness to Recommend the Proposed Treatment to a Friend at Pre-Training

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1.60</td>
<td>1</td>
<td>1.60</td>
<td>11.16</td>
<td>.0026**</td>
</tr>
<tr>
<td>Within</td>
<td>3.58</td>
<td>25</td>
<td>0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5.18</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. 1 = Yes, 2 = Not Sure, 3 = No.

* *p < .01

The reader will note that where post-hoc t-tests are appropriate, sometimes the Bonferroni procedure was used and sometimes the Newman-Keuls procedure was used. The Bonferroni procedure—a simultaneous comparison between all pairs of means—was calculated automatically by the BMDP computer program when one-way analyses of variance were performed. Newman-Keuls procedures—step-wise comparisons of all pairs of means—were calculated manually following the computer runs for analyses of variance with repeated measures. With the number of comparisons in this study, the Bonferroni and Newman-Keuls procedures are approximately
equal in stringency. The family-wise error rate was protected at $p < .05$ for both sets of tests.

Hypothesis A. Between the post-treatment and follow-up sessions, members of both the Contextual Therapy group and the Behavioral Therapy group were expected to lose more weight than the control group. Table 3 shows the mean group weights during the three assessment trials. An analysis of variance with repeated measures on the amount of weight changed over the course of the study revealed that there were no statistically significant weight losses (at $p < .05$) among groups, or over trials, and that there was no significant interaction. Group means for weight loss did not differ significantly at post-training or follow-up.

Hypothesis B. Between the end of treatment and follow-up, the CT group and the BT group were expected to show equivalent weight losses. The data and analyses used to test hypothesis A confirmed that BT and CT were equivalent in that there was no statistically significant weight loss over the course of the study. Because of this finding, the credibility of the three treatment rationale questions was tested at post-test and again at follow-up with one-way analyses of variance to determine if the rationales were still equally credible following training. Results are shown in Tables 4 through 9.
Table 3

Mean Weights at Each Trial for Subliminal Persuasion, Behavioral Therapy, and Contextual Therapy Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Test</td>
<td>165.94</td>
<td>158.25</td>
<td>190.11</td>
</tr>
<tr>
<td>Post-Test</td>
<td>163.81</td>
<td>155.82</td>
<td>190.25</td>
</tr>
<tr>
<td>Follow-Up</td>
<td>164.89</td>
<td>155.96</td>
<td>192.18</td>
</tr>
<tr>
<td>Change Between Trials 1 and 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>-1.06</td>
<td>-2.29</td>
<td>+2.07</td>
</tr>
<tr>
<td>SD</td>
<td>3.17</td>
<td>3.01</td>
<td>5.40</td>
</tr>
<tr>
<td>Change Between Trials 2 and 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>+1.08</td>
<td>+0.14</td>
<td>+1.93</td>
</tr>
<tr>
<td>SD</td>
<td>2.57</td>
<td>2.78</td>
<td>3.40</td>
</tr>
</tbody>
</table>

Note. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.

Tables 4 and 5 show group means and standard deviations for the logicalness of the treatment at post-test and follow-up respectively. One-way analyses of variance on these data failed to find any significant differences (at $p < .05$). Tables 6 and 7 show how successful subjects expected to be in meeting their weight goal (at post-test and follow-up, respectively). One-way analyses of variance on these data revealed no significant differences (at $p < .05$) among groups.
at post-test and follow-up. Tables 8 and 9 show means and standard deviations for data on whether subjects would recommend their treatment to a friend at post-test and follow-up respectively. One-way analyses of variance on these data did not detect a significant difference (at $p < .05$) among groups.

Table 4

Means and Standard Deviations for Rationale 1 at Post-Test: Logicalness of the Treatment

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.00</td>
<td>1.43</td>
<td>1.27</td>
</tr>
<tr>
<td>SD</td>
<td>1.00</td>
<td>0.79</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Note. 1 = Perfectly Logical, 3 = Somewhat Logical, 5 = Not Logical. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.

Table 5

Means and Standard Deviations for Rationale 1 at Follow-Up: Logicalness of Treatment

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.11</td>
<td>1.86</td>
<td>1.82</td>
</tr>
<tr>
<td>SD</td>
<td>0.78</td>
<td>1.07</td>
<td>0.98</td>
</tr>
</tbody>
</table>

Note. 1 = Perfectly Logical, 3 = Somewhat Logical, 5 = Not Logical. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.
Table 6

Means and Standard Deviations for Rationale 2 at Post-Test: "How Successful Will This Treatment Be for You in Meeting Your Weight Goal?"

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.78</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>SD</td>
<td>1.20</td>
<td>1.00</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Note. 1 = certainty, 3 = might work, 5 = won't work. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.

Table 7

Means and Standard Deviations for Rationale 2 at Follow-Up: "How Successful Will This Treatment Be for You in Meeting Your Weight Goal?"

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.11</td>
<td>2.57</td>
<td>2.46</td>
</tr>
<tr>
<td>SD</td>
<td>0.93</td>
<td>1.81</td>
<td>1.29</td>
</tr>
</tbody>
</table>

Note. 1 = certainty, 3 = might work, 5 = won't work. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.
Table 8
Means and Standard Deviations for Rationale 3 at Post-Test: Willingness to Recommend Treatment to a Friend

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.33</td>
<td>1.43</td>
<td>1.81</td>
</tr>
<tr>
<td>SD</td>
<td>0.71</td>
<td>0.54</td>
<td>0.60</td>
</tr>
</tbody>
</table>

Note. 1 = Yes, 2 = Not Sure, 3 = No. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.

Table 9
Means and Standard Deviations for Rationale 3 at Follow-Up: Willingness to Recommend Treatment to a Friend

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.78</td>
<td>1.29</td>
<td>1.46</td>
</tr>
<tr>
<td>SD</td>
<td>0.67</td>
<td>0.95</td>
<td>0.69</td>
</tr>
</tbody>
</table>

Note. 1 = Yes, 2 = Not Sure, 3 = No. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.

Hypothesis C. Self-efficacy ratings following training were expected to improve across trials for the BT and CT groups, but not necessarily for the SP group. Tables 10, 13, and 16 show mean ratings and standard deviations for the three self-efficacy questions (i.e. respectively: certainty of achieving, and certainty of maintaining target weight; and satisfaction with current weight). Tables 11, 14, and 17 contain summaries of analyses of variance with repeated measures for the respective variables. Post-hoc t-tests for
the respective significant ANOVAs are shown in Tables 12, 15, and 18.

Table 12 reflects that there was a main effect for the decrease in subjects' certainty of achieving their target weight between pre-training and follow-up \( F (2, 75) = 5.65, p = .006 \). The reader may also note that the decrease in certainty between post-test and follow-up closely approached the critical value, and accounts for 56 per cent of the difference in the marginal means in Table 10. This change was in the opposite direction from that predicted and may be related to subjects' lack of weight loss during treatment. In light of the fact that CT subjects showed a mean gain in weight, it is rather surprising that their certainty of achieving their target weights decreased the least over the course of the study.

Tables 13 and 14 show that there was a significant decrease over trials \( F (2, 48) = 4.38, p < .01 \) regarding subjects' certainty of being able to maintain their target weights (using the method they were taught). The Newman-Keuls procedure revealed significant differences (at \( p < .05 \)) between pretest and follow-up, and between post-test and follow-up (See Table 15). Inspection of the means in Table 13 shows increases in certainty for the two treatment groups (BT and CT) during training, however the placebo group (SP) exhibited a steady decline in certainty of maintaining target weight through the course of the study. When subjects'
satisfaction with their present weight was analysed (see Tables 16 and 17), a significant increase \( [F (2,75) = 8.00, p < .001] \) was found for trials, but not for groups or for interaction. Post-hoc analysis of marginal means for trials indicated that a significant difference existed \( (p < .05) \) between trials 1 and 2, and between trials 1 and 3.

Table 10

Means and Standard Deviations for Self-Efficacy Ratings Across Trials: Certainty of Achieving Target Weight

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
<th>Marginal means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial means</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>86.22</td>
<td>88.00</td>
<td>77.82</td>
<td>84.01</td>
</tr>
<tr>
<td>Post-test</td>
<td>63.67</td>
<td>85.00</td>
<td>74.27</td>
<td>74.31</td>
</tr>
<tr>
<td>Follow-up</td>
<td>51.00</td>
<td>63.86</td>
<td>70.64</td>
<td>61.83</td>
</tr>
<tr>
<td>Marginal</td>
<td>66.96</td>
<td>78.95</td>
<td>74.24</td>
<td>73.38</td>
</tr>
</tbody>
</table>

Standard deviations

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>13.67</td>
<td>34.18</td>
<td>30.81</td>
</tr>
<tr>
<td>BT</td>
<td>16.31</td>
<td>23.91</td>
<td>38.21</td>
</tr>
<tr>
<td>CT</td>
<td>26.82</td>
<td>29.87</td>
<td>23.49</td>
</tr>
</tbody>
</table>

Note. Per cent certainty is shown. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.
Table 11
Summary of Analysis of Variance with Repeated Measures over Trials for Self-Efficacy Ratings: Certainty of Achieving Target Weight

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>1778.91</td>
<td>2</td>
<td>889.46</td>
<td>0.81</td>
<td>.46</td>
</tr>
<tr>
<td>Error (a)</td>
<td>26455.31</td>
<td>24</td>
<td>1102.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trials</td>
<td>6454.04</td>
<td>2</td>
<td>3227.02</td>
<td>5.65</td>
<td>.006**</td>
</tr>
<tr>
<td>Interaction</td>
<td>2516.24</td>
<td>4</td>
<td>629.06</td>
<td>1.10</td>
<td>.37</td>
</tr>
<tr>
<td>Error (b)</td>
<td>27395.47</td>
<td>48</td>
<td>570.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>64599.97</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01
Table 12

Newman-Keuls Procedure for Self-Efficacy Ratings Across Trials: Certainty of Achieving Target Weight

<table>
<thead>
<tr>
<th>Trial</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>61.83</td>
<td>74.31</td>
<td>84.01</td>
<td>r</td>
</tr>
<tr>
<td>3</td>
<td>61.83</td>
<td>--</td>
<td>12.48</td>
<td>22.18*</td>
</tr>
<tr>
<td>2</td>
<td>74.31</td>
<td>--</td>
<td>9.70</td>
<td>2</td>
</tr>
</tbody>
</table>

Critical Value = \( S_B q_{.95}(r,48) \) where:

\[ S_B = 4.6788 \]

\[ r = 2 \quad 3 \]

\[ q_{.95}(r,48) = 2.85 \quad 3.42 \]

* \( p < .05 \)

Table 13

Means and Standard Deviations of Self-Efficacy Ratings Across Trials: Certainty of Maintaining Target Weight

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
<th>Marginal means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial means</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>76.56</td>
<td>76.71</td>
<td>64.27</td>
<td>71.59</td>
</tr>
<tr>
<td>Post-test</td>
<td>59.33</td>
<td>89.43</td>
<td>79.73</td>
<td>75.44</td>
</tr>
<tr>
<td>Follow-up</td>
<td>44.44</td>
<td>59.71</td>
<td>65.18</td>
<td>56.85</td>
</tr>
<tr>
<td>Marginal</td>
<td>60.11</td>
<td>75.29</td>
<td>69.73</td>
<td>67.96</td>
</tr>
</tbody>
</table>
Table 13--Continued

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard deviations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>15.63</td>
<td>27.71</td>
<td>25.81</td>
</tr>
<tr>
<td>Post-test</td>
<td>31.31</td>
<td>17.90</td>
<td>19.19</td>
</tr>
<tr>
<td>Follow-up</td>
<td>32.83</td>
<td>38.82</td>
<td>31.09</td>
</tr>
</tbody>
</table>

Note. Per cent certainty is shown. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.

Table 14

Summary of Analysis of Variance with Repeated Measures over Trials for Certainty of Maintaining Target Weight

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2893.39</td>
<td>2</td>
<td>1446.70</td>
<td>1.54</td>
<td>.24</td>
</tr>
<tr>
<td>Error (a)</td>
<td>22559.50</td>
<td>24</td>
<td>939.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trials</td>
<td>5742.93</td>
<td>2</td>
<td>2871.47</td>
<td>4.38</td>
<td>.01*</td>
</tr>
<tr>
<td>Interaction</td>
<td>4214.19</td>
<td>4</td>
<td>1053.55</td>
<td>1.61</td>
<td>.19</td>
</tr>
<tr>
<td>Error (b)</td>
<td>31441.53</td>
<td>48</td>
<td>655.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>66851.54</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .01
Table 15
Newman-Keuls Procedure for Certainty of Maintaining Target Weight

<table>
<thead>
<tr>
<th>Trials</th>
<th>3</th>
<th>1</th>
<th>2</th>
<th>Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>56.85</td>
<td>71.59</td>
<td>75.44</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>56.85</td>
<td>--</td>
<td>14.75*</td>
<td>18.59*</td>
</tr>
<tr>
<td>1</td>
<td>71.59</td>
<td>--</td>
<td>3.85</td>
<td>2</td>
</tr>
</tbody>
</table>

Critical Value = $S_{Bq.95}(r,48)$ where:

$S_B = 5.01$

$r = 2\ 3$

$q_{.95}(r,48) = 2.85\ 3.42$

*p < .05

Table 16
Means and Standard Deviations for Self-Efficacy Ratings Across Trials: Satisfaction with Present Weight

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
<th>Marginal means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial means</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>1.44</td>
<td>1.57</td>
<td>1.27</td>
<td>1.41</td>
</tr>
<tr>
<td>Post-test</td>
<td>1.56</td>
<td>2.86</td>
<td>1.82</td>
<td>2.00</td>
</tr>
<tr>
<td>Follow-up</td>
<td>1.67</td>
<td>2.57</td>
<td>2.36</td>
<td>2.19</td>
</tr>
<tr>
<td>Marginal</td>
<td>1.56</td>
<td>2.33</td>
<td>1.82</td>
<td>1.86</td>
</tr>
</tbody>
</table>
Table 16--Continued

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard deviations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>0.53</td>
<td>1.13</td>
<td>0.47</td>
</tr>
<tr>
<td>Post-test</td>
<td>1.01</td>
<td>1.46</td>
<td>1.17</td>
</tr>
<tr>
<td>Follow-up</td>
<td>0.71</td>
<td>1.13</td>
<td>1.12</td>
</tr>
</tbody>
</table>

Note. 1 = extremely dissatisfied, 10 = extremely satisfied. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.

Table 17

Summary of Analysis of Variance with Repeated Measures over Trials for Satisfaction with Present Weight

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>7.26</td>
<td>2</td>
<td>3.63</td>
<td>1.97</td>
<td>.16</td>
</tr>
<tr>
<td>Error (a)</td>
<td>44.24</td>
<td>24</td>
<td>1.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trials</td>
<td>8.95</td>
<td>2</td>
<td>4.48</td>
<td>8.00</td>
<td>.001***</td>
</tr>
<tr>
<td>Interaction</td>
<td>4.24</td>
<td>4</td>
<td>1.06</td>
<td>1.89</td>
<td>.13</td>
</tr>
<tr>
<td>Error (b)</td>
<td>26.85</td>
<td>48</td>
<td>0.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>91.54</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***p < .001
Table 18

Newman-Keuls Procedure for Satisfaction with Present Weight

<table>
<thead>
<tr>
<th>Trials</th>
<th>Mean</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Critical Value = $S_{Bq,0.95}(r,48)$ where:

$S_B = 0.1465$

$r = 2 \qquad 3$

$q_{.95}(r,48) = 2.85 \qquad 3.42$

*p < .05

Hypothesis D. The Contextual Therapy group was expected to be more effective in reducing the perceived severity of the problem of overweight than the Behavioral or control group; Both treatment groups were expected to be more effective than the control. Group means and standard deviations are shown in Table 19, and the summary table for analysis of variance with repeated measures is shown in Table 20. A statistically significant difference was obtained for both treatments [$F (2, 26) = 3.21, p < .05$] and trials [$F (2, 80) = 4.30, p = .02$]. There was no significant interaction. Table 21 shows post-hoc t-tests. BT and CT subjects experienced reductions in the perceived severity of their
problem of being overweight, but SP subjects remained virtually constant. SP and BT were significantly different from each other (at \( p < .05 \)). Trials 1 and 2 were significantly different from each other (at \( p < .05 \)), as were trials 1 and 3 (at \( p < .05 \)).

Table 19

Group and Trial Means, and Standard Deviations for Perceived Severity of Weight Problem

<table>
<thead>
<tr>
<th>Group</th>
<th>SP</th>
<th>BT</th>
<th>CT</th>
<th>Marginal means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial means</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>3.44</td>
<td>3.14</td>
<td>3.37</td>
<td>3.32</td>
</tr>
<tr>
<td>Post-test</td>
<td>3.44</td>
<td>2.43</td>
<td>3.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Follow-up</td>
<td>3.44</td>
<td>2.43</td>
<td>2.91</td>
<td>2.96</td>
</tr>
<tr>
<td>Marginal</td>
<td>3.44</td>
<td>2.67</td>
<td>3.09</td>
<td>3.09</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard deviations</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>0.53</td>
<td>0.38</td>
<td>0.67</td>
</tr>
<tr>
<td>Post-test</td>
<td>0.73</td>
<td>0.98</td>
<td>0.67</td>
</tr>
<tr>
<td>Follow-up</td>
<td>0.73</td>
<td>0.98</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Note. Ratings: 1 = No problem, 2 = mild, 3 = moderate, 4 = severe. SP = Subliminal Persuasion, BT = Behavioral Therapy, CT = Contextual Therapy.
### Table 20
Summary of Analysis of Variance with Repeated Measures: Perceived Severity of Weight Problem

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>7.15</td>
<td>2</td>
<td>3.57</td>
<td>3.21</td>
<td>.05*</td>
</tr>
<tr>
<td>Error (a)</td>
<td>26.73</td>
<td>24</td>
<td>1.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trials</td>
<td>2.45</td>
<td>2</td>
<td>1.23</td>
<td>4.30</td>
<td>.02*</td>
</tr>
<tr>
<td>Interaction</td>
<td>1.41</td>
<td>4</td>
<td>0.35</td>
<td>1.23</td>
<td>.30</td>
</tr>
<tr>
<td>Error (b)</td>
<td>13.68</td>
<td>48</td>
<td>0.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51.41</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

### Table 21
Newman-Keuls Procedure for Perceived Severity of Weight Problem

(i)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>BT</th>
<th>CT</th>
<th>SP</th>
<th>Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.67</td>
<td>3.09</td>
<td>3.44</td>
<td></td>
</tr>
<tr>
<td>BT</td>
<td>2.67</td>
<td>--</td>
<td>0.42</td>
<td>0.77*</td>
</tr>
<tr>
<td>CT</td>
<td>3.09</td>
<td>--</td>
<td>0.35</td>
<td></td>
</tr>
</tbody>
</table>

Critical Value: 3 0.73

Critical Value: 2 0.60
Table 21--Continued

(ii)

<table>
<thead>
<tr>
<th>Trials</th>
<th>Mean</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2.96</td>
<td>--</td>
<td>0.04</td>
<td>0.35*</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3.00</td>
<td>--</td>
<td>0.32*</td>
<td>2</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Critical Value = $S_B q_{.95}(r,48)$ where:

$S_B = 0.1036$

$r = 2 \quad 3$

$q_{.95}(r,48) = 2.85 \quad 3.42$

*p < .05

Discussion

The primary purpose of this study was to compare an unresearched treatment for overweight, contextual therapy, with a widely-used behavioral approach to weight loss, using a highly credible placebo control group for comparison. Testing the assumption that no significant differences existed among groups prior to training insured that the desired statistical procedures could be used with confidence. The finding that all of the control subjects were willing to recommend their treatment to a friend before they received training confirmed that the control condition (Subliminal
Persuasion) was at least as credible as the two treatment conditions at the outset of the study.  

Mean weight changes for all groups were modest and were not statistically significant among groups. All groups regained similar small amounts of weight between the end of training and follow-up eight weeks later. It may be concluded that in this pilot study, all three groups were equally effective or ineffective in producing weight loss and its maintenance. Some possible reasons for this phenomenon will be discussed under "Limitations" below.

The pretraining analysis of variance on questions relating to the credibility of the treatments confirmed that all three groups perceived their proposed treatment as credible. These results were confirmed again following training, and at the follow-up. It does not appear at this point that credibility of the training rationale is related to weight loss as long as all treatments are equally credible.

A gradual (and statistically significant) loss of certainty about achieving target weights occurred in all groups and appears to be related to subjects' lack of results in producing weight loss by the end of training. Since all the training was completed within four weekly sessions, there is likely to be a limit on how much weight one can lose in that relatively short time, and that is likely to affect one's certainty about achieving one's goal, which is also
tied to a deadline. Although it is not statistically significant, it is interesting to note that the contextual group's certainty of achieving target weight dropped the least over the course of the study (7%, as compared with SP's 35%, and BT's 25%).

Certainty of maintaining one's target weight decreased throughout the course of the study for individuals in the SP group, while it peaked at post-training for those in BT and CT before returning to near pre-training levels. There was a significant difference detected over assessment trials, but no difference among groups and no interaction.

Although satisfaction with present weight for those in the BT and CT groups increased over trials, the difference was not significant among groups. The comments from subjects in these two groups indicated that they had learned something that they could consciously continue to use, whereas many Subliminal Persuasion subjects' comments related to having a lack of "conscious knowledge" about what to eat, what to do, etc. (The reader may recall that the SP rationale called for changing attitudes, and hence behavior, through "subconscious" means. Members of this group had no conscious knowledge of what was on the slides they were being shown.)

Since all subjects stated that they intended to lose weight, and approximately 40 per cent of the subjects in each group did lose some weight in the course of the study, the three treatments may be said to have been equally effective
in terms of weight change. It is difficult to account for these results since there are no data on what subjects did specifically to produce weight loss. Subjects were not required to give the experimenter daily records on what they ate, how they ate it, etc., so the degree of adherence to the treatment programs (other than attendance at training sessions) can not be accurately estimated. Several subjects reported in group discussions that they had begun exercise programs. Positive expectation of losing weight may also have played an important role.

Disruption of established eating habits, which seems to be necessary for weight loss to occur, may have consequences that some subjects may not be willing to confront. Rather than being simply a solution to a problem, losing weight may cause certain problems to arise. For example, if one loses a great amount of weight, one may not only need to acquire a whole new wardrobe—including shoes, but need to have rings resized as well. This could be a rather expensive proposition and possibly sufficient (at either a conscious or "subconscious" level to keep one from losing weight. Disruption of one's eating habits could also affect interpersonal relationships since food and relationships are intimately woven together for many people: namely, getting attention, approval, or disapproval from others for eating, as well as using eating or "being overweight" to avoid relating to others in particular ways. Additionally, some
may reason that if they were thin, they would automatically become attractive and attracted to others, thus threatening present relationships or creating unwanted relationships. Remaining overweight thus may help to maintain the status quo and predictability in one's life.

From another point of view, some people equate size with presence or power (i.e. "If I were thin, I would blow away in the wind"; "Others could push me around"; "I couldn't throw my weight around"; etc.), or are afraid power would come to them if they lost weight (i.e. "If I were thin, I would not have any excuse for failing, ever again"). Others may want to prove that they can be successful despite their weight. Continuing to gain and lose weight can preoccupy some people to such an extent that they may think they would have nothing desirable to do if they gave up playing this game. That is, playing the "weight game" provides activities in which to indulge as well as a story about the game that can be used as a basis for social interactions. Individuals have specific, often unvoiced reasons for maintaining their weight. The cited reasons for not losing weight are not meant to be all-inclusive, but rather to be illustrative of the complex dynamics that one can use to maintain a weight problem. Clinicians working with the exogenous obese need to be aware that they are probably not treating a homogeneous population and that existing etiological classifications may not serve
to make useful distinctions for the psychological treatment of this condition and its accompanying issues.

Diets, and to a somewhat lesser extent, behavior modification programs using a diet, are consistent with the point of view that one must deprive or deny one's self what one really wants to eat in order to have the desired weight loss. This can be called a context of insufficiency (e.g. "I am not sufficient"; There is not enough . . . .").

Schwartz (1982) lists five elements to what he calls "the Diet Mentality."

1. Being fat is bad--Being thin is good.
2. Dieting can lead to a vicious cycle of failure (dieting, failing to stay on the diet, failing to lose weight, self-blame; dieting, etc.).
3. Self-imposed deprivation and restrictions (regarding eating and other activities of daily living) which lead to a lack of vitality and lowered self-esteem.
4. Responsibility for the basic function of eating can be placed on someone other than one's self (e.g. parent, spouse, author of the current diet, physician, etc.).
5. The symptoms rather than the causes of overweight are treated. Dieting does not bring to light the reasons why people put more food in their bodies than they need.

To date, most of what is known about how to become slim has been based on research and observations of the overweight. Schwartz has likened this to attempting to
discover how to become rich by studying the poor. How much more enlightening might it be to use as a model, people who are already successfully slim? What attitudes and beliefs do they hold about food and eating? What are the principles they use to determine when to eat and how much to eat?

The contextual approach used in the present study offers notions which are completely opposite to commonly held notions of what is necessary to lose weight (compare with the "Diet Mentality" above).

1. It is easy and natural to lose weight and be slim. Being fat is not bad.

2. The way diets actually work in the long run, is to increase weight through lose-gain cycles. Going on and off diets is comparable to surviving a famine. Overcompensation at the end of a diet can lead to a weight gain.

3. It is possible to lose weight while eating the foods one likes--using the principles that naturally thin people use to eat. (Eat only when hungry, eat only the foods you like, stay aware of how the food is affecting your body, and stop eating when the sensation of hunger disappears.)

4. It is important to take personal responsibility (as distinguished from blame) for the present condition of the body. It is not necessary for all of us to conform to currently fashionable media stereotypes in order to have what we want or to accomplish our purposes.
5. Discovering one's personal laws for eating begins to allow one the choice of whether to follow the dictates of one's past or to choose to eat as a naturally thin person.

The second purpose of this study is to attempt to discover which of the therapies have the most impact on reducing the perceived problem of "being overweight." By the end of the study, all subjects still considered themselves to be overweight to some degree. Statistical differences were obtained for treatments and trials, but there was no interaction. In contrast, the contextual and behavioral groups' severity-of-problem ratings decreased over the course of the study. The differences also appeared to have been psychologically significant judging from comments received from the subjects in the two treatment groups. The subjectively-rated severity of the weight problem remained the same for the SP group throughout the study. BT showed a reduced rating between pre- and post-treatment that was significantly different from SP. It may be concluded that training subjects in specific actions they can take toward meeting their goals has more effect than asking them accept "passive instructions." It may appear paradoxical that the CT group showed a gain in weight at post-treatment and follow-up yet reported less of a problem with weight. This apparent contradiction can be explained in that subjects began to accept themselves more as they were, rather than based on their previous expectations of how they "should be."
Some even reported getting in touch with an intention to "be big" or something of the like.

The author does not believe that the measures used in the present study were sensitive enough to measure what has been called a "paradigm shift" or "contextual shift" that appeared to have occurred with virtually everyone in the contextual group but not often with those in the other groups. This shift has not been addressed by previous therapeutic models. Observations of the shift include: Subjects stated that they felt better, and were more positive about themselves, that they were still fat but that being thin was not as important to them, and that they were no longer willing to subject themselves to extreme means to solve what is actually a problem in self-esteem. Many mentioned that they felt thinner at times without any change in weight, appearance, or how their clothes fit.

Robert Schwartz (personal communication, June 8, 1983) reported having excellent results with anorexic and bulimic clients in terms of ending the issue of "being overweight." Apparently, for these persons, a shift in self-definition and self-perception was necessary to precede completion of the physical aspects of the disorder. Subjects in the present study were not identified as being in these categories and an attempt was made to screen them out.

In a sense, most subjects in the contextual group were able to "get outside of who they thought they were" and
perceive a new sense of self-worth, personal power, and a new acceptance that they were fine exactly the way they were. The instruments used in the present study apparently were not sufficiently powerful to measure these aspects of change. As an analogy, how would one measure such characteristics as "dignity," "prosperity," "integrity," or "being able to make a difference?" On one hand, these characteristics are quite intangible, and exist only by declaration of the perceiver that they exist. In the contextual model, these distinctions are created, and they only exist in the moment that they are created. They can have emotional ("process") and behavioral ("content" or "result") concommitants, but the "reality" of them exists in declaring that they exist.

Results in the domains of process and content can be achieved by the use of affirmations (or personal declarations). An affirmation is a positive self-statement relating to a desired result. In its most powerful form, it is stated in the present tense with the verb "to be", e.g., "I am (a naturally thin person)." The result of stating an affirmation is that one either perceives and accepts the truth of it, or becomes aware of their resistance to getting to the truth of it (cognitive dissonance). By acknowledging the dissonant thought as if it were a separate voice sharing an opinion, one begins to have a choice which is distinctly different from the choices one makes automatically.
Attrition

The attrition rate in the present study seemed high in comparison with previous studies using refundable deposits. A major difference between the present study and earlier work is that almost all the women in the present study reported being employed outside the home, and earlier reports were based on college student samples. It seems likely that the possible loss of refund ($30 in this case) may be more meaningful to a student whose resources may seem to be more limited. Reasons given by subjects for dropping out were not related to the treatments. Most subjects who dropped cited professional and family commitments; only one stated that she had decided not to handle her weight problem at present.

Limitations of the Study

The present study utilized volunteer subjects recruited through newspaper advertising from the Dallas general population of women. Since this was not previously established as a clinical population, there may have been some possibility that subjects did not experience the same degree of overweight or distress over their condition as clients seeking clinical services, though this seems somewhat unlikely in view of the fact that all subjects acknowledged that they considered they had a moderate to severe problem with weight at the outset of the study and they responded to advertisement for treatment of that problem.
The requirement of posting a refundable deposit effectively screened out those who were simply curious. It can be said that although the experimental sample was possibly not identical to a clinical population, the subjects could be expected to share many of the same "essential characteristics" (Paul 1969, and Zytowski, 1966, cited in Rimm & Masters, 1979) including: severity and duration of overweight, motivation, and existence of other problems in living (excluding mental illness within the past 2 years, medical disorders affecting the condition of overweight, etc.). In this regard, the findings of this study might be expected to generalize well from the subject population to outpatient clinical populations.

Another limitation was that a short follow-up period was used. Ideally one would like to follow the subjects in a weight-loss study for at least one year; however this was not possible in the present study. In light of this limitation, the present findings must be regarded as preliminary results. A conservative point of view might hold that the application of the results to the clinical setting must await further experimentation (in clinical and analog settings), case reports with more clinicians and subjects, and longer follow-ups. A more liberal point of view would hold that since no harm was done to the subjects, the treatments were equally effective in terms of weight lost, and subjects stated they received benefit from participating, there would seem to be
little risk in using the contextual model with clients who desire to lose weight. The therapist's own preference of treatments could guide his or her approach at this point. Perhaps the most serious limitation of the present study was that thus far no one has developed a reliable method to measure what occurs within an individual who experiences a paradigm shift. Another point to consider is that there were few performance demands placed on subjects other than to attend all sessions. They were not required to keep extensive data related to their eating.

Suggestions for Further Research

The present study was the first experimental study on a treatment modality using the contextual model. While few differences were detected in the present study, this absence of differences may reflect the selection of the research instruments. More studies on contextual therapy will be forthcoming and there exists a need for instruments which are sensitive to detecting "paradigm or contextual shifts." Perhaps even the basic research methodology needs to be evaluated for appropriateness. In treatment outcome studies, the persons being studied are not actually "subjected" to anything, but rather they choose to participate in an interaction. Thus, calling them "participants" rather than "subjects" might be an appropriate starting point in recontextualizing the research paradigm from a "they-did-it-to-me and I-am-not-responsible" point of view to a perhaps
more powerful point of view which asserts that individuals have choice and responsibility in the creation of their life circumstances. A far more difficult point lies in some of the assumptions that researchers currently make. The null hypothesis, that there is no difference among groups, is routinely used to test research hypotheses. This assumption may be seen as a reflection of the widely-held assumption that one does not, and can not make a difference in the world--that we are all essentially interchangeable cogs and operate at the effect of circumstances.

Present research models seem to be based largely on the principles of Newtonian physics. Kuhn (1970) has observed that it takes something on the order of 70 years before ideas relating to the state-of-the-art in physics begin to be used on a common level in society. It has now been over 80 years since the discovery of quantum physics and the notion that particles can make sudden drastic shifts (quantum leaps). It seems to have been assumed that people operate in a linear fashion (e.g. that past behavior is the best predictor of future behavior), and that sudden, dramatic shifts were not likely or possible. With the advent of contextual therapy, neurolinguistic programming, and the like, people can begin to experience dramatic shifts toward achieving their desires (e.g. "being suddenly thin"--whether there is supporting physical evidence or not). Nearly all subjects in the Contextual group reported having such experiences during the
course of training (e.g. feeling "suddenly thin"). The creation of such an experience can be the beginning of living as a "naturally thin person"—regardless of weight. An important question now arises: "how can these experiences be validated with contemporary research methodology?"

Another question which bears investigation is whether the principles Schwartz has identified as those naturally thin people use in their relationship with food can be validated empirically. Can a pencil-and-paper measure be developed to differentiate thin and overweight people on the basis of their adherence to the principles?

Individual's issues surrounding their overweight condition need to be explored. Simply stating that one is overweight by a given percentage or number of pounds is not a sufficient explanation of the problem. The overweight condition of the body has some meaning for the individual who may use this meaning to keep from doing (or to keep doing) various activities in life. Successful treatment may focus more on these areas than on losing weight.

Since the completion of this study, Robert Schwartz has reported (personal communication, March 5, 1984) having excellent results with anorexic and bulimic clients. His contextual approach to ending the issue of being overweight should be empirically tested with anorexic and bulimic patients.
Appendix A

USE OF HUMAN SUBJECTS

INFORMED CONSENT

NAME OF SUBJECT: (Print)

1. I hereby give consent to Matt Mathews and associates to perform or supervise the following investigational procedure or treatment for the condition of overweight (to be chosen at random by the investigator from one of the following):
   a) Behavioral Treatment.
   b) Contextual Treatment.
   c) Subliminal Persuasion Treatment.

2. I have (seen, heard) a clear explanation and understand the nature and purpose of the procedure or treatment; possible alternative procedures that would be advantageous to me (her); and the attendant discomforts or risks involved and the possibility of complications which might arise. I have (see, 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 (her) participation. With my understanding of this, having received this information and satisfactory answers to the questions I have asked, I voluntarily consent to the procedure or treatment designated in Paragraph 1 above.

Date

Signed (Subject): ___________________________________________________________________

or Person Responsible __________________________________________________________________

& Relationship: ___________________________________________________________________

Instructions to persons authorized to sign: If the subject is not competent, the person responsible shall be the legal appointed guardian or legally authorized representative.

If the subject is a minor under 18 years of age, the person responsible is the mother or father or legally appointed guardian.
Appendix A--Continued

If the subject is unable to write her name, the following is legally acceptable: "Jane H. (Her X mark) Doe" and two (2) witnesses.

Witness

Witness
Appendix B

Identification Sheet

PLEASE PRINT

Exp. I.D. ___, ___, ____

Name ____________________________________________

Address (current) ________________________________________

Telephone: day (___) __________________

evening (___) __________________

(Permanent address, if different):

_____________________________________________________

Telephone: (___) ________________________________

I certify by my signature that I meet all of the following requirements to participate in this study on weight control:

1. I am an adult female, between the ages of 18 - 45 years.

2. I want to lose 15 pounds or more.

3. I am volunteering to participate in an experimental program dealing with the problem of overweight. I understand that the purpose of the training I will receive is to teach me a method of controlling my weight.

4. I am not currently taking medication to alter my weight (e.g. diuretics--"water pills", appetite suppressants, amphetamines--"speed", etc.)

5. To the best of my knowledge, my overweight is due to overeating; and it is not due to a medical disorder (e.g. diabetes, thyroid disorder, etc).

6. To the best of my knowledge, I am not pregnant; and I do not intend to become pregnant within the next 3 months.

7. I consider myself to be in good health.
Appendix B--Continued

8. I agree to make a deposit of $30.00 (thirty dollars) which will be returned to me at the end of this study as long as I have met the following conditions:

a) attended all scheduled training and follow-up sessions, and

b) participated in the data collection as requested.

I understand that I do not have to lose any weight to receive a refund of my deposit. I understand that I may withdraw my permission to participate in the study at any time by informing my group leader; and that in withdrawing I will forfeit the $30 deposit.

Signature ___________________________ Date ___________________________
Appendix C

Physical Measurements

Exp.I.D. ______,______,______  Administration 1, 2, 3.
Rater________________________ Date ____________________
Height (no shoes; to 1/4" in.) ______ ft. ______ in.
Weight (nearest to 1/4 lb.) _________ lbs.

Caliper measurements (mm):

<table>
<thead>
<tr>
<th></th>
<th>Triceps</th>
<th>Supraillium</th>
<th>Thigh</th>
<th>Averages</th>
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</thead>
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<td>_______</td>
<td>_______</td>
<td>______</td>
<td>_______</td>
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</tbody>
</table>

Sum ______

Percent Body Fat ______

Observer ratings:

[ ] slim  [ ] overweight  [ ] obese

Body Frame:  [ ] small  [ ] med  [ ] large
Appendix D

Questionnaire

Exp. I.D.____,____,______
Administration: 1, 2, 3.

Your answers to this questionnaire and the others used in this study will be kept confidential. Please answer all items. If you are unsure of an exact answer, estimate and note the item by writing "Est." by the item.

1. Today's date: ____________________
2. Birthdate: ____________________
3. Current age: ____ years, ____ months
4. Highest level of education completed: ____________________
5. Occupation: ____________________
6. Do you live with someone? (Identify by relationship) ____________________
7. Do you think they are willing to support you in being your desired weight or size?  
   [ ] Yes  [ ] Not sure  [ ] No
8. I have a: ____ small; ____ medium; ____ large; body frame.
9. The last time I checked my weight was ____________________
   and I weighed ____________.
10. My ideal weight (i.e. what I want it to be) is: ____.
11. I consider that: (check only one)
   [ ] I am thinner than I want to be.
   [ ] My weight is exactly right and it is not a problem.
   [ ] I am overweight (I am heavier than I want to be).
   [ ] I am obese (I am grossly overweight).
12. Do you have fluid retention before your period (menstrual cycle)?
   [ ] Yes  [ ] No
Appendix D--Continued

13. If you answered Yes to question 12, do you have fluid retention right now?  
   |☐| Yes  |☐| No

14. If you answered Yes to both 12 and 13, how much of your weight is due to fluid retention right now?  _______ lbs.

15. Is anyone in your family of origin obese? (Circle your answer) 
   Father  Mother  Brother(s)  Sister(s)

16. Why do you want to lose weight at this time?

17. The one person I most want to lose weight for is (relationship):  ________________________________.

18. What previous methods have you used in attempting to alter your weight or size? (Examples: diets--specify type, fasting, psychological intervention--describe, exercise programs, medical treatments--describe; etc). Use back of sheet if necessary.

19. Do you currently exercise? List activities, how far, how much time, and how often: (Use back of sheet if necessary.)

20. List any physical or emotional disorders for which you received treatment during the past two years: (Use back of sheet if necessary.)
21. List all medications (prescription, non-prescription, and "recreational" drugs) which you are currently using. Include dosage and any effect on your weight or appearance. (Use back of sheet if necessary.)

22. Have you received any training or therapy relating to behavior modification?  
   |   | No   |   | Yes

23. Have you received any training or therapy related to "the creation of context?" (Examples: Context Trainings, est, Diets Don't Work Seminar, Getting With It, etc.)  
   |   | No   |   | Yes

   If you answered "Yes" to either of these questions (22 or 23), please list the sources of your training, type of training, and dates (Use back of sheet if necessary):

24. How much of a problem is your weight to you right now?  
   |   | no problem
   |   | mild problem
   |   | moderate problem
   |   | severe problem

25. How long have you had a weight problem?  
   Age at which the problem started: ______

26. How willing are you to have your weight problem solved?  
   |   |不愿意 to look at the problem
   |   | I would rather stay fat than deal with my weight.
   |   | willing to look at the problem
   |   | willing to do something about the problem
   |   | willing to do anything to solve the problem
Appendix D--Continued

Questions 27 through 30 are about eating patterns and attitudes. Answer them as they apply to you right now by circling one word following the question.

27. I eat only when I am hungry. 
   Always Frequently Sometimes Never

28. I eat exactly what I want to eat (NOTHING that I want to eat is "off-limits"). Always Frequently Sometimes Never

29. I am aware of what I am eating and the effect it is having on my body. Always Frequently Sometimes Never

30. I am aware of how full I am while I am eating. Always Frequently Sometimes Never

Please estimate (for questions 31, 32, & 33):

31. How often have you had the feeling of being slim in the past month (number of days)?

32. How often have you been complimented on your appearance in the past month (number of days)?

33. How often have you been able to wear smaller clothes than usual in the past month (number of days)?

Use the Hunger Rating Scale (next page) to answer 34 and 35.

34. What is your usual level of hunger before you eat a meal?

35. At what level do you usually stop eating?
Appendix D--Continued

Hunger Rating Scale

1. You are wobbly and dizzy. You can hardly think. Most people have to go at least a day without food to get close to a One.

2. You are still very hungry, but you could probably stagger to the dinner table.

3. You could definitely eat, but you are not on the verge of collapse.

4. You are starting to get a little hungry. Your body is starting to send messages that you might want to eat.
   
   4.9 Your body has almost had enough.

5. You are not hungry any more. Your body has had what it needs and is satisfied.
   
   5.1 You have put more food into your body than it needs.

6. You are a little full, but you could eat more. You could force down another helping, even though your body no longer wants anything.

7. You are becoming uncomfortable. You are starting to feel as if your stomach has stretched a few inches. The bloat is starting to creep up on you.

8. You are more than full, and it's starting to hurt. You almost wish you had not had that second helping.

9. Your body is screaming, "Get me out of here!" and the pain is setting in. It is absolutely no fun anymore.

10. This is Thanksgiving Day Full, when you have to roll yourself to the couch after dinner and all you can do is sleep. You did not realize you were eating that much, and now you wish they would cut it out of you. You hurt for hours and swear you will not eat for a week.

Note. Hunger Rating Scale was adapted from Diets don't work (p. 152) by R. Schwartz, 1982a, Galveston, TX: Breakthrough Publishing. Copyright 1982 by R. Schwartz. Adapted with permission of the author.
Appendix E

Exp. I.D. ____ ____ ____ Administration 1, 2, 3.

E Scale

INSTRUCTIONS: Check the box that most nearly describes your attitude for each statement. Answer all statements.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

1. I feel that I am a person of worth, at least on an equal basis with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined to feel that I am a failure.
4. I am able to do things as well as most people.
5. I feel I do not have much to be proud of.
6. I take a positive attitude toward myself.
7. On the whole, I am satisfied with myself.
8. I wish I could have more respect for myself.
9. I certainly feel useless at times.
10. At times I think I am no good at all.
Appendix F

Exp. I.D. _____,_____,_____ Administration 1, 2, 3.

BC Scale

INSTRUCTIONS: Below are some things characteristic of yourself or related to you. Consider each item listed, and beside it write how you feel about that item using one of the following numbers:

1 strong positive feelings.
2 moderate positive feelings.
3 no feeling one way or the other.
4 moderate negative feelings.
5 strong negative feelings.

a. ___hair v. ___arms
b. ___facial complexion w. ___chest (or breasts)
c. ___appetite x. ___appearance of eyes
d. ___hands y. ___digestion
e. ___distribution of hair (over body)
f. ___nose z. ___hips
g. ___physical stamina aa. ___resistance to illness
h. ___elimination bb. ___legs
i. ___muscular strength cc. ___appearance of teeth
j. ___waist dd. ___sex drive
k. ___energy level ee. ___feet
l. ___back ff. ___sleep
m. ___ears gg. ___voice
n. ___age hh. ___health
o. ___chin ii. ___sex activities
p. ___body build jj. ___knees
q. ___profile kk. ___posture
Appendix F--Continued

r. ___ height
s. ___ keeness of senses
 t. ___ tolerance for pain
u. ___ width of shoulders

ll. ___ face
mm. ___ weight
nn. ___ sex organs
oo. ___ exercise
Appendix G

Exp. I.D. A, A, A, Administration 1, 2, 3.

Treatment Rationale

Subliminal Persuasion Group

Diets alone have not been effective in the long-term control of overweight. The purpose of this group is to train you in a method of controlling your weight by changing your attitudes, what you eat, and how you eat it. Subliminal persuasion will be used to help you change your eating habits:

1) You will learn several ways of relaxing. We will practice relaxing during part of each class.

2) When you are relaxed, it is easier for you to learn. You will see a set of slides. Each slide will be shown for less than a second. You may not consciously see everything on the slide. Your subconscious mind will see the information, and be able to act upon it.

Information on the slides will help to re-program your subconscious mind to select the right foods to help you lose weight and keep it off permanently.

3) We will discuss the role of nutrition and exercise in health and weight loss.

There will be time for discussion and questions. You will need to bring a notebook and pen or pencil.

IF YOU HAVE ANY QUESTIONS ABOUT THE PROCEDURES, ASK THEM NOW.

WHEN ALL OF YOUR QUESTIONS HAVE BEEN ANSWERED, PLEASE ANSWER THE FOLLOWING QUESTIONS:

1. To what extent does this treatment seem logical to you?

<table>
<thead>
<tr>
<th>perfect</th>
<th>somewhat</th>
<th>not logical</th>
</tr>
</thead>
</table>

perfectly | somewhat | not logical
Appendix G--continued

2. To what extent do you think you will be successful in meeting your weight goal using this treatment?

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<tbody>
<tr>
<td>will work</td>
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<tr>
<td>for sure</td>
<td>work</td>
<td>work</td>
</tr>
</tbody>
</table>

3. Knowing what you know right now, would you recommend this treatment to a friend?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Not sure</th>
<th>No</th>
</tr>
</thead>
</table>
Appendix G--continued

Exp. I.D.  B,____,______  Administration 1, 2, 3.

Treatment Rationale
Behavior Therapy Group

Diet alone have not been found to be effective in the long-term control of overweight. The purpose of this group is to train you in a method of controlling your weight by:

1) Learning to identify situations where you are likely to overeat, and ways to cope with these situations or avoid them.

2) Learning how to change what you eat, and how you eat it.

3) Learning how to reward yourself for developing the behaviors that will allow you to control your own weight.

4) Discussing nutrition and exercise in the control of weight.

To fulfill this purpose, the following methods will be used with your group: Lecture, discussion, and some outside assignments. You will need to bring a notebook and pen or pencil.

IF YOU HAVE ANY QUESTIONS ABOUT THE PROCEDURES, ASK THEM NOW.

___________________________________________________________

WHEN ALL YOUR QUESTIONS HAVE BEEN ANSWERED, PLEASE ANSWER THE FOLLOWING QUESTIONS:

1. To what extent does this treatment seem logical to you?
   |   |   |   |
   perfectly somewhat not logical logical logical

2. To what extent do you think you will be successful in meeting your weight goal using this treatment?
   |   |   |
   will work might won't work for sure work
Appendix G--continued

3. Knowing what you know right now, would you recommend this treatment to a friend?
   □ Yes  □ Not sure  □ No
Appendix G--continued

Exp. I.D. C, C, C, C

Treatment Rationale
Contextual Therapy Group

The purposes of being in this group are:

1) To discover why you have not been able to achieve lasting weight losses with diets.

2) To discover the real reasons why you have not been able to lose weight and keep it off. These include what benefits you receive from being overweight, and what thoughts and reasons you have that keep you from losing weight.

3) To learn a method of losing weight--without dieting--by eating the way naturally slim people eat.

4) To end "being overweight" as a problem for you.

5) To discuss the role of nutrition and exercise in weight loss and health.

To fulfill these purposes, the following methods will be used with your group: Lecture, discussion, observing your own thoughts, feelings, and behaviors; and sharing with a partner. You do not have to talk in front of the group unless you choose to do so. You will need to bring a notebook and a pen or pencil.

IF YOU HAVE ANY QUESTIONS ABOUT THE PROCEDURES, ASK THEM NOW.

WHEN ALL YOUR QUESTIONS HAVE BEEN ANSWERED, PLEASE ANSWER THE FOLLOWING QUESTIONS:

1. To what extent does this treatment seem logical to you?

   |   |   |   |
   perfectly    somewhat    not
   logical      logical     logical

2. To what extent do you think you will be successful in meeting your weight goal using this treatment?

   |   |   |   |
   will work  might    won't
   for sure   work    work
Appendix G--continued

3. Knowing what you know right now, would you recommend this treatment to a friend?

   [ ] Yes    [ ] Not sure    [ ] No
Appendix H

Exp. I.D. _____

Self-Efficacy Rating--PRE-TRAINING

PLEASE CIRCLE THE NUMBER OF YOUR ANSWER:

1. Before you begin your workshop, please use the following scale to rate how certain you are that you can achieve your target weight. (Rate in percentage.)

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<tr>
<th>0</th>
<th>10</th>
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<th>80</th>
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<tr>
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<td>Maybe</td>
<td>Certainty</td>
<td>100% Certain</td>
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2. How certain are you that you will be able to maintain your target weight using the methods you will learn in this workshop? (Rate in percentage.)

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<tr>
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3. How satisfied are you with your present weight?

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<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
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<td>Somewhat</td>
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<tr>
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<td>Opinion</td>
<td>Satisfied</td>
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</table>
Appendix H--Continued

Exp. I.D. __, __, ______

Self-Efficacy Rating--POST-TRAINING

1. Now that you have completed your workshop, please use the following scale to rate how certain you are that you can achieve your target weight. (Please rate in percentage.)

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<tr>
<th>No</th>
<th>10</th>
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2. How certain are you that you will be able to maintain your target weight using the methods you have learned in this workshop? (Use percentage.)

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<td>Opinion</td>
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Appendix H--Continued

Exp. I.D. ___,_____

Self-Efficacy Rating--FOLLOW-UP

1. Now that you have completed your workshop and had several weeks of practice, please use the following scale to rate how certain you are that you can achieve your target weight. (Please rate in percentage.)

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</table>

2. How certain are you that you can maintain your target weight using the methods you have learned in this workshop? (Use percentage.)

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</tr>
</tbody>
</table>
Appendix I

Classified Advertisements

Dallas Times Herald, January 8-9, 1983.

LADIES, WANT TO LOSE WEIGHT? 48 healthy women, ages 18 to 45, and at least 15 lbs. overweight needed for research on weight loss. Must deposit $30. Refundable at end of study. CALL NOW to register: 644 - 0231.


LADIES, WANT TO LOSE WEIGHT? 48 healthy women, ages 18 to 45, & at least 15 lbs. overweight needed for research on weight loss. CALL NOW for details: 644 - 0231.
Appendix J

Table 21

Summary of One-Way Analyses of Variance for Dependent Variables Before Training

<table>
<thead>
<tr>
<th>Variable</th>
<th>MS Among&lt;sup&gt;a&lt;/sup&gt;</th>
<th>MS Within&lt;sup&gt;b&lt;/sup&gt;</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>32.23</td>
<td>48.65</td>
<td>0.66</td>
<td>.05</td>
</tr>
<tr>
<td>Education</td>
<td>1.39</td>
<td>4.14</td>
<td>0.33</td>
<td>.05</td>
</tr>
<tr>
<td>Weight</td>
<td>2587.74</td>
<td>1414.60</td>
<td>1.83</td>
<td>.18</td>
</tr>
<tr>
<td>Severity of Problem</td>
<td>0.19</td>
<td>0.32</td>
<td>0.59</td>
<td>.56</td>
</tr>
<tr>
<td>Willingness to Solve Problem</td>
<td>0.14</td>
<td>0.31</td>
<td>0.46</td>
<td>.64</td>
</tr>
<tr>
<td>Sum of Principles</td>
<td>4.99</td>
<td>3.32</td>
<td>1.50</td>
<td>.05</td>
</tr>
<tr>
<td>Self-Esteem Scale</td>
<td>4.30</td>
<td>19.13</td>
<td>0.22</td>
<td>.80</td>
</tr>
<tr>
<td>Body Cathexis</td>
<td>597.92</td>
<td>458.34</td>
<td>1.30</td>
<td>.29</td>
</tr>
<tr>
<td>Rationale 1</td>
<td>1.12</td>
<td>0.52</td>
<td>2.16</td>
<td>.14</td>
</tr>
<tr>
<td>Rationale 2</td>
<td>1.36</td>
<td>0.64</td>
<td>2.13</td>
<td>.14</td>
</tr>
<tr>
<td>Rationale 3</td>
<td>1.60</td>
<td>0.14</td>
<td>11.16</td>
<td>.003**</td>
</tr>
<tr>
<td>Self-Efficacy 1</td>
<td>281.00</td>
<td>428.47</td>
<td>0.66</td>
<td>.53</td>
</tr>
<tr>
<td>Self-Efficacy 2</td>
<td>494.34</td>
<td>550.99</td>
<td>0.90</td>
<td>.15</td>
</tr>
<tr>
<td>Self-Efficacy 3</td>
<td>0.20</td>
<td>0.50</td>
<td>0.40</td>
<td>.68</td>
</tr>
</tbody>
</table>

<sup>a</sup> df = 2,  <sup>b</sup> df = 24

** p < .01
References


Schwartz, R. (1982, August 1). Diets don't work. Seminar conducted in Dallas, TX.


