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The effect of perceived therapist warmth on the effectiveness of deep muscle relaxation training

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THE EFFECT OF PERCEIVED THERAPIST WARMTH ON THE
EFFECTIVENESS OF DEEP MUSCLE RELAXATION TRAINING

A Thesis Presented

By

Christopher C. Tolsdorf

Submitted to the Graduate School of the University
of Massachusetts in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE

December 1973

Psychology

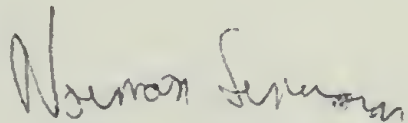
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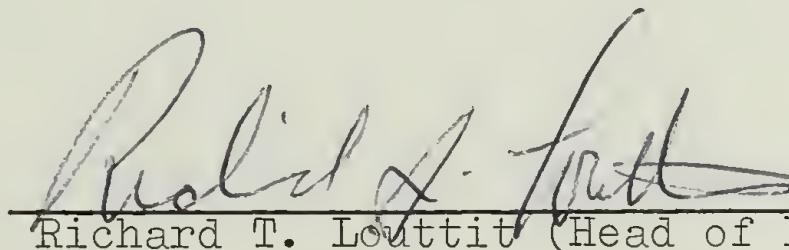
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C H A P T E R I

INTRODUCTION

In the systematic investigation of therapeutic factors in behavior modification, the majority of the literature is devoted to specific techniques based on the learning theories of men such as Pavlov, Hull, and Skinner, and evidence is noticeably lacking on the significance of non-specific factors such as therapist warmth, status and prestige. The existing studies on the latter variables concerned themselves with whether or not the therapist must necessarily be present for certain behavioral techniques to be effective. Kahn and Baker (1968) found that patients could work at home with prepared tapes and instructions with a minimum of therapist contact with no apparent deficit in therapy. Lang, Melamed and Hart (1970) found that machines programmed to conduct systematic desensitization achieved results equal to or superior to those achieved by 'live' therapists doing in vivo therapy. Krapfl and Nawas (1969) found that both live and semi-automated desensitization procedures were superior to pseudodesensitization control procedures, and they concluded that "the relationship (therapist-client) is neither a primary nor a critical factor in desensitization" (p. 435). Similar conclusions have also been reached by other

researchers (Kahn and Quinlan, 1967, Donner and Guerney, 1969).

Additional research indicating the superfluousness of the therapist-client relationship comes from reports that patients can be transferred from therapist to therapist with no ill effects (Wolpe, 1962, Lazarus, Davison and Polefka, 1965, Geer and Gatkin, 1966). If a patient can be transferred without effect, this would suggest that the role of the therapist as a person is minimal when desensitization procedures are used. This is supported by Lang, Lazovik and Reynolds (1965) who found that relaxation, a close therapeutic relationship, and discussion, are in and of themselves, no more effective than a no-treatment procedure, and they concluded that in behavior modification the therapist-client relationship has little therapeutic value.

While these studies suggest that relationship factors are incidental to treatment outcome, many authors believe just the opposite, namely, that the quality of the therapist-client relationship is a determining factor in treatment success (Wolpe, 1969, Gassner, 1970, Lazarus, 1971, Kraft, 1971). Ryan and Gizynski (1972) report a retrospective study of patients and therapists who engaged in behavior modification. They reported that positive outcome was not associated with amount or type of technique used, but rather with mutual positive feelings between the therapist

and client, the patient's confidence of a successful outcome and the therapist's efforts to facilitate this, and the patient's perception of the therapist as a confident, persuasive, and satisfied with the outcome of the treatment. The patients felt, and the experimenters agreed, that the most universally helpful elements of their experience in therapy were the therapist's calm, sympathetic, listening support, approval, advice, and faith. These are variables which have been shown to be associated with success in traditional psychodynamic therapy (Gardner, 1964). This study is inconclusive, however, in that it was based on a possibly biased population, and used as raw data self-reports of what the patients thought was important for treatment success, and this may have no correlation with what was indeed important.

In further support of the importance of relationship factors, Lazarus (1961) reports that a sense of trust can be helpful in supplementing the specific anxiety-inhibiting techniques of desensitization. Bandura and Walters (1963) state that behavior modification can be enhanced if the therapist has high status and prestige. Favorable patient expectancies are thereby fostered, social reinforcement is more effective, and the therapist is more potent as a source of suggestion. Goldstein, Heller, and Sechrest (1966) have gathered evidence revealing that an increase in interpersonal attraction of the therapist and patient boosts

the therapist's power of behavior modification while attractiveness and prestige have secondary reinforcing value.

These variables are those sometimes associated with a placebo effect, which Paul (1966) has suggested serves a therapeutic function in behavior modification. The placebo effect is explained in terms of the therapist's ability to change the expectancies of the client by giving him a constant reassurance of cure. Most probably the term placebo effect is a misnomer applied to therapeutic factors which have not been clearly delineated by therapists and researchers. One such factor may be that of social reinforcement which has been demonstrated experimentally (Krasner, 1962, 1963, 1965). As a social reinforcer the therapist is susceptible to factors which determine the effectiveness of such reinforcers. Social reinforcement is more powerful when the reinforcing agent is perceived as attractive (in the inclusive sense), and it is in this respect that the therapist-client relationship becomes important. A good relationship increases the valence of the therapist as a reinforcer, giving him more power to change the client's behavior in the desired direction.

Another non-specific factor in behavior modification may be that of cognitive and social factors. Wilkins (1971) found that the effectiveness of desensitization does not depend on the juxtaposition of relaxation and

anxiety producing scenes alone, but also on the therapist-client relationship, cognitive variables involved in the expectancy of therapeutic gain, information feedback of success, training in control over attention, and vicarious learning of the contingencies of behavior through instructed imagination. Similar results are reported by Leitenberg, Agras, Barlow, and Oliveau (1969) who found that when instructions for therapeutic gain and praise for small improvements were added to relaxation contiguous with imagination of hierarchy scenes, there was a significant reduction in anxiety and fear.

Each of the above studies indicates directly or indirectly that the therapist-client relationship is of some importance in the treatment process. Unfortunately, none of these studies have considered the effect of differences in the quality of the relationship without the confounding of other variables such as expectancy of success and presence or absence of verbal reinforcement. It is thus impossible, based on the present research, to determine the exact importance and effect of the therapist-client relationship in behavior modification.

In other types of therapy there is evidence that relationship factors are important in treatment outcome. In therapeutic analogs subjects who perceive therapists as warm (as opposed to cold) tend to be more complementary in

their evaluation of their work (Greenberg, 1969, Greenberg, Goldstein, and Perry, 1970, Greenberg, Goldstein and Gable, 1971). There are no references, to my knowledge, as to whether or not therapist warmth is associated with treatment outcome in behavior modification. It is the purpose of this paper to investigate the effect of degree of perceived warmth on the effectiveness of a behavior modification technique. Perceived warmth depends to a large degree on who is doing the perceiving so it is important to not only look at the objective warmth of the therapist, but also at the process and parameters of interpersonal perception.

The Client as Perceiver. When entering a therapeutic (or analog) situation, a client brings with him a certain set of expectancies about the situation and the therapist. These expectancies are then modified as the client gains more information and experience in the situation. But what determines a client's perceptions and attributions?

Newcomb (1963) has reported that the "kinds of information about another person that are relevant to attraction toward him in general are those that result in the attribution to him of properties that are regarded as rewarding" (p.378). The personal properties attributed to another person are a result of prior information about what the person is like, observations of the individual in interaction with others, and personal experiences in interacting with him. A client's attributions begin with his preconceptions about what therapists are like and later these

become progressively molded by personal experiences and observations. These perceptions depend on how the therapist acts and on the patient's individual preferences. In general, if the client perceives the therapist as a warm person he will respond in kind, while if he perceives him as cold, he will respond in a cold fashion.

The importance of such perceptions and attributions is evidenced by the work of Kelly (1950) and Asch (1946) who have reported that the attribution of a central trait or quality such as warmth can greatly influence the total impression of the person. They found that people perceived only as 'warm' were also attributed with the qualities of being sociable, popular, good natured, generous, humorous, and humane, even though there was no evidence given about the target person on which to base these attributions. They also found that the expectation that the target person was warm produced greater interaction initiated by the perceiver. The perceiver's interpretation of new information about the stimulus person was consistent with the original attribution of warmth or coldness, so that the first impressions and attributions dictated how later new information would be interpreted. The work of Kelly and Asch indicates the importance of first impressions in relationship formation and the importance of the attribution of central personality characteristics. These two

factors effect the later perceptions and actions of the perceiver.

The ramifications of impression formation for therapy can be conceptualized using Heider's (1958) balance theory. The elements among which a balanced relationship exists for an individual are: his degree of attraction, positive or negative, toward some object (in the inclusive sense referring to persons, issues, and values); his degree of attraction, positive or negative, toward another individual; and the second individual's attitude, as perceived by the first person, toward the same object. A balanced state exists insofar as these attractions are positive and the individual perceived his own and the other's attitudes as being similar. In Heider's words; "if a balanced state does not exist, then forces toward this state will arise. If a change is not possible, then the state of imbalance will produce tension"(p.201).

Applying these formulations to a hypothetical therapeutic situation, if a patient perceives a therapist as 'cold' and therefore perceives the therapist as negative, then suggestions proffered by the therapist will be overtly or covertly resisted by the patient in order to insure a balanced state. The only way a balanced state can exist is if the patient discredits the therapist's suggestions or the therapist himself. For example, for a patient to

accept the therapist's suggestions (i.e., relaxation instructions) while having negative feelings toward him would place the patient in a state of imbalance and thus produce tension. Theoretically, then, a poor therapist-client relationship can lead to counter-productive behavior on the part of the client, interfering with the progress of therapy and the effectiveness of the therapist. This remains to be proven within the paradigm of behavior modification.

Implications for Behavior Therapists. The above review has applicability to behavior therapists in that there are definitely individual differences in therapeutic style between therapists which produce differential effects on their execution of behavioral techniques (Krasner, Ullman, Weiss, and Miller, 1961). The emphasis on specific techniques in training and research in behavior modification has prevented attention from being focused on the importance of the therapist's knowing his own stimulus value in the therapeutic situation. If the above formulations are correct, then this oversight is potentially handicapping.

If a relationship factor can be shown to determine the outcome of the most structured and impersonal behavior modification technique, this would suggest the importance of this variable for other behavioral techniques. Kanfer and Phillips (1966) provide a four-fold classifica-

tion of behavior therapy techniques according to the importance the therapist-client relationship in each. Some techniques minimize the use of the therapist as a direct therapeutic tool, emphasizing instead the impersonal contingencies of extinction and reciprocal inhibition and related procedures. Classical Wolpean desensitization is the most extreme example of what Kanfer and Phillips refer to as replication therapy. It is highly structured and makes little use of the therapist as a purveyor of reward, so differences between therapists should have minimal effects on the outcome of the treatment. If a relationship factor can be demonstrated to be a factor in determining the effectiveness of this type of procedure, it would suggest that relationship factors are also important for those behavior techniques which rely more heavily on the therapist as a person.

The Hypothesis. The purpose of this study is to investigate the relationship between quality of the therapist-client relationship and the effectiveness of a behavior modification technique. In this study, the exact relationship factor to be varied is that of perceived personal therapist warmth. Subject's perceptions of this attribute in the therapist can be neatly controlled by giving the subjects prior information concerning the traits of the therapist. It has been shown that this approach firmly controls the subject's perceptions and attributions (Kelly, 1950, Greenberg, 1969, Greenberg, Goldstein, and Perry, 1970,

Greenberg, Goldstein, and Gable, 1971). Our hypothesis is that subjects who perceive the therapist as 'warm' will respond more quickly and more completely to his instructions to relax than subjects who perceive him as 'cold'. The most basic aspect of the desensitization procedure is relaxation training, the subject's responsiveness to which may be measured by self-reports of changes in state anxiety, and by changes in physiological levels of arousal. Both basal skin conductance and heart rate have been shown to correlate with depth of relaxation (Paul and Trimble, 1970, Mathews and Gelder, 1969, Paul, 1969, Montague, 1966).

Our hypothesis is that subjects who perceive their therapist as warm will show a greater decrease in state anxiety and physiological arousal (skin conductance and heart rate) as a result of relaxation training than will subjects who perceive their therapist as cold.

C H A P T E R I I

METHOD

The subjects were ten male and ten female undergraduates between the ages of 18 and 20 who were selected from a group of 68 volunteers seeking extra experimental credit for an introductory course in psychology. A total of 20 began participating in the study but 3 failed to report to all experimental sessions and these 3 were replaced by subjects randomly selected from the remaining group of volunteers. No subjects had any previous or current experience in therapy. The subjects had been told at the time of recruitment that the experiment would require three experimental sessions, one week apart, each consisting of deep muscle relaxation training and physiological recordings. In order to randomly select subjects, each volunteer was assigned a random number and then assigned sequentially according to their number to one or two treatment groups, the only reservation being that there be five males and five females in each of the treatment groups. The subjects in the warm treatment group (WARM) were led to believe that the experimenter was a warm individual while the subjects in the cold treatment group (COLD) were led to believe that the experimenter (E) was a cold individual.

The subjects (Ss) reported individually at one week

intervals for three weeks to a laboratory in the research area of a general psychology building at the University of Massachusetts. The procedure was identical for all three experimental sessions, with the one exception to be noted below. S was met at the door by E, a 24 year old male graduate student in conservative dress, and ushered through a darkened room containing recording equipment into a sound deadened room containing a small desk, a padded reclining chair, and a one-way mirror to the equipment room allowing observation into the experimental room but not out of it. Because of a long term heating problem in the building, the temperature in the experimental room ranged from 96 to 98 degrees for the duration of the study. The Ss were asked to sit at the desk and an envelope containing the Spielberger State Anxiety Scale (Appendix A) and the Spielberger Trait Anxiety Scale (Appendix B), both with instructions for self-administration. E instructed S to open the envelope and follow the instructions. E then left the room and observed S through the mirror. At the end of the two scales were the following instructions which S read.

In this experiment you will receive relaxation training that will consist of three twenty-minute sessions, one week apart, presented to you over earphones from a tape made by your trainer. During this period you will recline in an arm chair with your eyes closed while the recording electrodes monitor your heart rate and GSR, two indices of muscular relaxation. This type of training has been used extensively in therapy by Clinical Psychologists and its

effectiveness has been demonstrated repeatedly. All it requires is the systematic alternate tensing and relaxing of individual muscles in the body.

One of the purposes of the experiment is to determine the characteristics of a good trainer. Different people administering the same relaxation technique get different results, and it is important to isolate the variables in their performance which dictate their effectiveness so that the training procedures may be used most economically. In order to investigate this problem we have a number of relaxation trainers participating in this experiment. At the end of each training session you will be asked to rate your trainer on a number of personality and technique variables on a standard rating form.

One problem with this research is that in a clinical therapy session the trainee knows the trainer, and this familiarity has proven to be an asset in training. Because of the time limitations and the large number of trainers and subjects involved, we are providing you with the following short sketch of your trainer. We suggest that you read this carefully in that it may help you in rating him at the end of the session.

At this point the instructions differed for the two treatment groups. The COLD group read the following:

Mr. Tolsdorf is an experienced therapist in the field of behavior modification, and he has used relaxation training extensively in therapy situations. He is twenty-four years old and single. People who know him consider him to be a rather cold person, hard working, practical, and sure of himself.

Please sit quietly. Mr. Tolsdorf will be right with you to begin the next part of the experiment.

The WARM group received the same instructions except that the phrase "very warm" was substituted for the phrase "rather cold". The objective of this manipulation

was to vary Ss' perception of E along a warm-cold continuum.

When E had seen that S had completed reading the instructions he entered the experimental room and invited S to sit in the reclining chair (if it was S's first experimental session E questioned S on S's age, academic major, academic class, previous or current experience in therapy, yoga, meditation, or hypnosis, and this information was recorded in S's file). E then attached four 10mm Beckman electrodes, one on each the right wrist and left ankle to record heart rate, and one on each the left wrist and palmar section of the left hand to record skin resistance. For all subjects on the first session, and one-half the subjects on the second session, Grass EC2 Electrode Cream was used as the contact medium. However, when it was discovered that this cream significantly reduces skin resistance, a shift was made to Johnson and Johnson K-Y Lubricating Jelly for use with the skin resistance electrodes. While the electrodes were being attached, E reiterated that part of instructions relating to the harmlessness of the recording wires and the purposes of the recording electrodes. Recording was done with the use of a Grass model 5D Polygraph. A Grass model 5P4 Preamplifier recorded heart rate, and a Grass model 5P1 Preamplifier recorded skin resistance. Stereo earphones were then placed on the S's head and the S was asked to recline in the chair. E then left the experimental room closing the door behind him.

From the equipment room E addressed S over the earphones and read the following statement:

Can you hear me alright?...Good. What I would like you to do for the next five minutes is to imagine some quiet restful scene, maybe on campus, in the woods, or by the ocean, but it should be some place you know and like and which you consider to be relaxing. Just close your eyes and make believe you are there. After this we will start the relaxation training proper, but for now just relax and enjoy that restful scene. Any questions?...Fine. Go ahead.

S was then allowed to sit quietly for five minutes while the polygraph was calibrated. At the end of five minutes the taped instructions were begun over the earphones. These instructions were recorded in E's voice in stereo and they lasted twenty minutes (Appendix C). The instructions were an expansion of the procedure outlined by Wolpe and Lazarus (1966). During the first session relaxation instructions included the hands, arms, shoulders, neck, face, and upper back. The second session the following week included relaxation of the muscle groups just mentioned plus the lower back and legs. In the third session all major muscle groups were covered concluding with a serial relaxation procedure.

Heart rate and skin resistance were recorded continuously for the first and last five minutes of each relaxation session. The S scores for pre-test and post-test skin conductance were obtained by averaging the skin resistance in ohms at five second intervals for the

for the first and last minute of the tape, respectively. Pre-test and post-test heart rate was recorded by counting the number of beats in the first and last minute of the training session.

At the end of the tape S was asked to open his eyes and sit up, at which point E entered the experimental room and removed the electrodes. E then asked S to move to the desk and fill out the Spielberger State Anxiety Scale (Appendix D) and the Post-Session Questionnaire (Appendix E), which was designed to assess S's perceptions of E's warmth, S's opinions of the relaxation procedure and his own degree of relaxation within the session. These two scales were self-administered with written instructions. E then confirmed the next meeting time the following week and S left the experimental room.

C H A P T E R I I I

RESULTS

The means and standard deviations for Trait Anxiety are contained in Table 1. A two-way analysis of variance*

 Insert Table 1 about here

(Groups X Sessions) was applied to the data, and the results, contained in Table 2, indicate that the WARM group produced significantly higher Spielberger Trait Anxiety Scores ($p < .05$) both before and during the study. There were no

 Insert Table 2 about here

significant interaction or session effects.

Table 3 contains the means and standard deviations for State Anxiety. A three-way analysis of variance*

 Insert Table 3 about here

(Groups X Sessions X Tests) was applied to these data and

* University of Massachusetts Computing Center, BMD08V, September 1, 1965.

Table 1

MEANS AND STANDARD DEVIATIONS FOR TRAIT ANXIETY

	Session One	Session Two	Session Three
Cold Group	M = 43.20	M = 43.50	M = 43.30
	Sd = 4.34	Sd = 4.90	Sd = 5.75
Warm Group	M = 48.30	M = 49.50	M = 48.90
	Sd = 8.08	Sd = 6.09	Sd = 4.53

Table 2

ANALYSIS OF VARIANCE FOR TRAIT ANXIETY

Source	df	SS	MS	F
Total	1	127604.8167	127604.8167	
Groups	1	464.8167	464.8167	6.96*
Sessions	2	5.6333	2.8167	.17
P(G)	18	1202.7000	66.8167	
GS	2	2.0333	1.0167	.06
PS(G)	36	589.0000	16.3611	

*p<.05

Table 3

MEANS AND STANDARD DEVIATIONS FOR STATE ANXIETY

Warm Group

Session One	Session Two	Session Three
M = 25.1	M = 22.6	M = 21.5
Sd = 3.7	Sd = 8.8	Sd = 7.6
M = 19.5	M = 20.5	M = 20.0
Sd = 4.2	Sd = 8.6	Sd = 7.6

Cold Group

Session One	Session Two	Session Three
M = 21.6	M = 19.5	M = 18.7
Sd = 3.3	Sd = 3.4	Sd = 2.3
M = 17.1	M = 16.9	M = 18.7
Sd = 1.3	Sd = 0.9	Sd = 0.9

the results are contained in Table 4. The analysis indicates

 Insert Table 4 about here

that there was a significant Groups effect ($p < .05$) with the WARM group demonstrating higher Spielberger State Anxiety scores than did the COLD group. There was also a significant Tests effect ($p < .05$) indicating a drop from pre-test to post-test scores within sessions for both groups. There were no significant interaction effects.

The means and standard deviations for heart rate are contained in Table 5. Table 6 demonstrates that the

 Insert Table 5 about here

analysis of variance for these data failed to reveal any significant effects.

 Insert Table 6 about here

The means and standard deviations for Log Skin Conductance are contained in Table 7. An analysis of

 Insert Table 7 about here

Table 4

ANALYSIS OF VARIANCE FOR STATE ANXIETY

Source	df	SS	MS	F
Total	1	47880.07000	47880.0700	
Groups	1	291.4083	291.4083	5.16 [*]
Tests	1	279.0750	279.0750	4.94 [*]
Sessions	2	51.8000	25.9000	1.96
GT	1	.0083	.0083	.00
GS	2	.8667	.4333	.03
TS	2	61.8000	30.9000	2.34
P(GT)	36	2030.4333	56.4009	
GTS	2	4.2667	2.1333	.16
SP(GT)	72	949.2667	13.1853	

* $p < .05$

Table 5

MEANS AND STANDARD DEVIATIONS FOR HEART RATE

Warm Group

	Session One	Session Two	Session Three
Pre-Test	M = 76.9	M = 67.7	M = 71.9
	Sd = 14.5	Sd = 11.3	Sd = 12.0
Post-Test	M = 71.9	M = 65.2	M = 70.2
	Sd = 15.3	Sd = 7.9	Sd = 9.9

Cold Group

	Session One	Session Two	Session Three
Pre-Test	M = 76.8	M = 75.1	M = 70.6
	Sd = 9.9	Sd = 11.8	Sd = 9.9
Post-Test	M = 71.0	M = 70.8	M = 67.2
	Sd = 8.0	Sd = 12.7	Sd = 9.0

Table 6

ANALYSIS OF VARIANCE FOR HEART RATE

Source	df	SS	MS	F
Total	1	610898.7000	610898.7000	
Groups	1	61.6333	61.6333	.28
Tests	1	396.0333	396.0333	1.82
Sessions	2	550.5500	275.2750	1.26
GT	1	9.6333	9.6333	.04
GS	2	407.1167	203.5583	.93
TS	2	29.6167	14.8083	.06
P(GT)	36	7835.3333	217.6481	
GTS	2	5.7167	2.8583	.03
SP(GT)	72	5873.6667	81.5787	

Table 7

MEANS AND STANDARD DEVIATIONS FOR LOG SKIN CONDUCTANCE

Warm Group

Session One	Session Two	Session Three
M = 1.6288	M = 1.5144	M = 1.4874
Sd = .1577	Sd = .0943	Sd = .0655
M = 1.6707	M = 1.5918	M = 1.5616
Sd = .1777	Sd = .0800	Sd = .0620

Cold Group

Session One	Session Two	Session Three
M = 1.7786	M = 1.6052	M = 1.6383
Sd = .1910	Sd = .0774	Sd = .1695
M = 1.9267	M = 1.6705	M = 1.6923
Sd = .2180	Sd = .1109	Sd = .1617

variance was performed on these data and indicates a significant Groups effect ($p < .05$) with the WARM group showing significantly lower skin conductance scores. There was also a significant Sessions effect ($p < .05$) demonstrating a tendency for skin conductance to drop over sessions for both groups. The Tests effect approached significance ($p < .06$) indicating a tendency for skin conductance to increase within sessions from pre-test to post-test. This is probably attributable to the unusually high temperature in the experimental room. These results are portrayed in Table 8.

 Insert Table 8 about here

In a twenty-item Post Session Questionnaire in which the Ss were asked to rate E and the training on a number of aspects, the answers to four questions produced significant differences between groups. On the first, Ss were asked to rate E on a six-point cold-warm scale, and the ratings of the COLD group were significantly lower (colder) ($p < .05$) than the WARM group. There was also a significant Sessions effect ($p < .01$). Together they reflect a tendency for the two groups to converge over sessions, with the COLD group showing a regression toward the scores of the WARM group which remained stable. The results are summarized in Table 9.

Table 8

ANALYSIS OF VARIANCE FOR LOG SKIN CONDUCTANCE

Source	df	SS	MS	F
Total	1	322.3228	322.3228	
Groups	1	.4775	.4775	14.42 ^{**}
Tests	1	.1085	.1085	3.24
Sessions	2	.4575	.2288	6.91 [*]
GT	1	.0006	.0006	.01
GS	2	.0264	.0132	.39
TS	2	.0037	.0019	.05
P(GT)	36	1.1911	.0331	
GTS	2	.0009	.0005	.03
SP(GT)	72	.9435	.0131	

* $p < .05$
 ** $p < .01$

 Insert Table 9 about here

On the question concerning the over-all rating of E on a six-point bad-good scale, the WARM group scores were significantly higher (better) ($p < .05$) and the results are summarized in Table 10. There was also a significant

 Insert Table 10 about here

Sessions effect ($p < .05$) demonstrating a tendency for the ratings of both groups to become more favorable over sessions.

The Ss were also asked; "If you had a problem, would you feel comfortable bringing it to your trainer if you had the chance?" The results, summarized in Table 11, demonstrate that the WARM group expressed a significantly greater willingness to do so than the COLD group did ($p < .05$).

 Insert Table 11 about here

In Table 12 it can be seen that the WARM group rated E as more informal, with the ratings of both groups regressing toward the mean over sessions. Both effects were

 Insert Table 12 about here

Table 9

MEANS AND STANDARD DEVIATIONS FOR RATINGS OF WARM-COLD

	Session One	Session Two	Session Three
Warm Group	M = 1.7	M = 1.7	M = 1.7
	Sd = .48	Sd = .94	Sd = 1.19
Cold Group	M = 3.4	M = 2.6	M = 2.3
	Sd = 1.17	Sd = .84	Sd = 1.07
			1 = Warm
			6 = Cold

Table 10

MEANS AND STANDARD DEVIATIONS FOR RATINGS OF GOOD-BAD

	Session One	Session Two	Session Three
Warm Group	M = 5.7	M = 5.9	M = 6.0
	Sd = .60	Sd = .31	Sd = .00
Cold Group	M = 5.3	M = 5.4	M = 5.5
	Sd = .48	Sd = .51	Sd = .52
			1 = Bad
			6 = Good

Table 11

MEANS AND STANDARD DEVIATIONS FOR RATINGS OF WHETHER
SUBJECTS WOULD BRING PERSONAL PROBLEMS TO EXPERIMENTER

	Session One	Session Two	Session Three
Warm Group	M = 4.6	M = 4.8	M = 5.2
	Sd = 1.42	Sd = 1.13	Sd = 0.78
Cold Group	M = 2.9	M = 3.6	M = 3.7
	Sd = 1.91	Sd = 1.57	Sd = 1.76
			1 = No
			6 = Yes

Table 12

MEANS AND STANDARD DEVIATIONS FOR RATINGS OF
FORMAL-INFORMAL

	Session One	Session Two	Session Three
Warm Group	M = 5.1	M = 5.0	M = 4.6
	Sd = .31	Sd = .66	Sd = 1.42
Cold Group	M = 2.8	M = 3.3	M = 3.9
	Sd = 1.31	Sd = 1.33	Sd = 1.44
			1 = Formal
			6 = Informal

significant ($p < .01$).

For the remaining sixteen questions in the Post-Session Questionnaire there were no significant group, session, or interaction effects.

In order to more fully examine the self-report data, Pearson Product-Moment correlations were performed between the twenty responses on the Post-Session Questionnaire, Trait Anxiety, State Anxiety (pre-test and post-test) and Change in State Anxiety. Correlations were obtained for each cell (WARM-Session One, WARM-Session Two, etc.). For each variable pair the three session correlations for each group were converted into z scores (Hays, 1966, p.680) which were averaged, the average being reconverted into a correlation coefficient. This yielded a single correlation for each treatment group for each variable pair. The three session correlations were only averaged if there was no apparent trend in the correlations over sessions. The probability of occurrence of the averaged correlations was determined with $df=9$ (Edwards, 1967, p.426). Table 13 contains a summary of those correlations which have a combined probability of at least .10 (Winer, 1962, p.43).

 Insert Table 13 about here

The variable most frequently listed as significant is that of Ss' rating of E on an over-all good-bad scale.

Table 13

AVERAGED CORRELATION COEFFICIENTS FOR WARM AND COLD GROUPS

Question Number	2	3	4	5	8	9	11	15	19	20	22	23	24
2. Incompetent-Competent													
3. Relaxing-Useless													
4. Ineffective-Effective		-.22 -.66											
5. Helpful-Not-Helpful		*.25 .56	*-.52 -.33										
8. Quitting-Not-Quitting	.64 .40	-.40 -.63	.48 .70										
9. Warm-Cold			*-.52 -.28										
11. Bad-Good	.80 .63		.71 .24	.56 .48									

* $p < .10$, otherwise $p < .05$

Table 13-- Continued

Question Number	2	3	4	5	8	9	11	15	19	20	22	23	24
15. No- Yes							.78 .16						
19. Proud- Modest							.65 .19						
20. Good Natured- Irritable			-.32 -.54	*.32 .54	*.32 .50	*.32 .50	.74 .33						
22. Trait Anxiety	*.02 .64						.83 .60						
23. Pre-State Anxiety			-.57 -.34										
24. Post-State Anxiety		.90 .36	-.62 -.48	*.55 .20		.83 .26						.89 .43	
25. Change in State Anxiety							.74 .21			*.31 -.21		-.23 -.92	.26 .62

* $p < .10$, otherwise $p < .05$

A rating of 'good' was positively correlated with rating E as 'competent' and 'modest', and with rating the procedure as 'effective', and with change in Log Conductance. It was also correlated with Trait Anxiety and with rating E as 'irritable' and the procedure as 'unhelpful'. Thus while good-bad ratings were frequently significantly correlated with other variables, it was not consistent in any one direction. A much more consistent variable was Ss' rating of the effectiveness of the procedure. Perceived effectiveness of the procedure was positively correlated with not reporting urges to quit, rating E as 'good', and it was negatively correlated with rating E as 'not-helpful', 'cold', and 'irritable'. Perceived effectiveness was also negatively correlated with Pre- and Post-State Anxiety so that the more effective the Ss rated the procedure, the lower their State Anxiety.

Post-State Anxiety was also positively correlated with Ss' rating E as 'cold' and 'unhelpful', and with rating the procedure as 'useless'. It was negatively correlated with rating the procedure as 'effective'. Generally, the more favorable the Ss' ratings, the lower the Post-State Anxiety.

A final group of correlations are those concerned with whether or not S had thoughts of quitting. The responses of those Ss with few thoughts of quitting were positively correlated with responses rating E as 'competent' and the

procedure as 'effective', and they were negatively correlated with rating the hour as 'useless'. It thus appears that thoughts of quitting or terminating are associated with other perceptions of the effectiveness of the technique and the E.

C H A P T E R I V

DISCUSSION

The results described above present a number of significant effects and interactions which could potentially point to a verification of the hypothesis that subjects who perceive their trainer as warm will show a greater drop in State Anxiety and physiological arousal as a result of relaxation training than those subjects who perceive their trainer as cold. Skin conductance scores demonstrated three significant effects: first, significantly lower skin conductance for the WARM group than for the COLD group; second, a rise in skin conductance within sessions for both groups; and third, a decrease in skin conductance within sessions for both groups over sessions. The first effect is probably the most dramatic. Inspection of Table 7 shows that on all tests of all sessions, the WARM group had lower skin conductance scores than did the COLD group. If we assume that skin conductance is an accurate index of physiological arousal, then these data suggest that the WARM group was significantly and consistently less aroused than the COLD group. This finding directly supports the hypothesis but it must be tempered by the finding that group differences on skin conductance existed on the first test of the first session, prior to any relaxation training. This raises the possibility that inherent group

differences may be determining skin conductance scores to some extent.

The second significant effect demonstrates an increase in skin conductance within sessions for both groups, and while this is not what is usually found in relaxation training, it is consistent with reports of the effect of unusually warm rooms on skin conductance (Wilcott, 1963). Under unusually high temperature situations skin conductance increases with time, and considering that the experimental room was between 96 and 98 degrees for all Ss, we would expect a significant increase in conductance from the beginning to the end of the hour. The lack of significant interactions between groups, sessions, and tests effects indicates that both group's reactions to the warm room were essentially similar, and while the temperature probably determined the direction of the significant tests effect, it probably had little or no effect on the groups or sessions effects. Within-sessions changes in skin conductance, then, fail to bear on the validity of the hypothesis.

The third skin conductance effect reflects a decrease in conductance over sessions, and this probably reflects the Ss' increased familiarity with the experimental situation. The Ss may have gradually become desensitized to the apparatus, procedure, and E, and this probably determined the observed reduction in arousal over sessions.

The lack of any Groups X Sessions interaction indicates that both groups reacted in essentially similar ways to the repeated sessions, and this would indicate that the effect of perceived warmth on skin conductance is stable over time, but does not produce greater gains over sessions for those who perceive E as warm as opposed to those who perceive E as cold. In summary, it appears that the significant Groups effect supports the hypothesis while the other skin conductance data tend to be inconclusive.

If, as the hypothesis asserts, arousal reduction is dependent on the degree of perceived experimenter warmth, then we would expect that as the two group's perceptions of E's warmth converged, so too would their skin conductance scores. While there was a significant Groups X Sessions interaction indicating a convergence over sessions of the two group's ratings of E warmth, there was no comparable convergence of skin conductance scores over sessions. This suggests one of three possibilities; either changes in perceptions of E do not immediately affect levels of arousal because of a delay in the responsiveness of skin conductance, or there are group differences which are determining skin conductance differences, or room temperature overrode all existing effects. While it is unclear which possibility is more likely, the alternatives must be kept in mind while evaluating the data.

The heart rate data showed no significant effects. All groups on all sessions demonstrated a drop in heart rate from pre-test to post-test, but this drop failed to reach significance. While this does not support the hypothesis and is not consistent with the skin conductance data, it cannot be considered a rejection of them either, especially when it is considered that there is frequently a poor correlation between heart rate and skin conductance measures (Grossberg, 1965, Paul, 1969).

An additional interpretational caution must be added when it is noted that the WARM group was significantly higher on Trait Anxiety both prior to and following the experimental manipulation. To the degree that confirmation of the hypothesis would depend on lower anxiety and arousal in the WARM group following the experimental manipulation, this group difference could bias the data towards rejecting the hypothesis. On the other hand, to the extent that confirmation depends on greater anxiety and arousal reduction in the WARM group following training, the group differences may bias toward confirming the hypothesis, the WARM group by being more anxious having a greater potential for anxiety reduction. In either case it certainly raises the possibility that group differences may exist on other variables in addition to Trait Anxiety, and that group differences should be taken into account when evaluating the data.

As with Trait Anxiety, the WARM group showed higher State Anxiety scores than did the COLD group, and both groups showed a significant decrease in State Anxiety within sessions. The within sessions decrease for both groups perhaps indicates that the relaxation procedure was functioning in reducing state anxiety as was expected. The WARM group's higher State Anxiety is probably a reflection of their higher Trait Anxiety. This is not surprising considering that the questions on both inventories are very similar, so we would expect that if the WARM group was higher on one inventory, it would also be higher on the other. The net result is that the measured responses for State Anxiety fail to support the hypothesis.

While the physiological and anxiety data present an unclear picture of the effect of the experimental manipulation, there is no such confusion in the area of cognitive effects. The relatively unobtrusive manipulation concerning experimenter warmth generalized into other significant areas. The WARM group Ss reported that in a time of hypothesized need they would feel more comfortable bringing their troubles to E than the COLD group did. The WARM group also rated E as being significantly better over-all and more informal. All of these factors combine to create a more positive image of E in the WARM group's opinion. While this study does not directly demonstrate

the advantage of such cognitions on the course of therapy, it does demonstrate that relatively minute manipulations can have broad effects on the perceptions and cognitions of the subject. The fact that such cognitions generalized to other areas would argue that the manipulation was indeed effective and the Ss were significantly affected by the warm-cold manipulation. It should be noted that because the Ss had a paucity of information about E, the warm-cold information may have had a greater impact than if it had been part of a more complete personality description. It is not impossible that such an effect may not have been attained had more information about E been available.

Additional support for the importance of the Ss' perceptions is provided by the correlations among self-report variables. These indicate that perceptions of E and the technique are associated, and while no causation can be demonstrated, the relationships are still intriguing. The fact that higher Post-State Anxiety was correlated with ratings of E coldness and lack of helpfulness while Pre-State Anxiety was not, indicates that perceived warmth and helpfulness may be related to the degree of relaxation. Also, perceptions of specific E qualities such as competence and helpfulness tend to be associated with the general ratings of E as good or bad. The fact that general ratings of E are correlated with specific perceptions indicates that a single perception, such as coldness, may generalize

to broader perceptions which may in turn affect the formation of other specific perceptions later on. If warmth and coldness are to be demonstrated as factors in successful therapeutic intervention, it may be possible that it is with regard to their effect of determining general attributions towards the therapist, rather than by determining specific attributions of warmth vs. coldness. The correlational evidence here tends to suggest that generalizations of specific attributions to broader, more portent, attributions, may be a possible factor in determining the success of a therapeutic intervention.

It is interesting to note that the results are largely consistent with attribution theory and balance theory. Attribution theory (Kelly, 1950, Asch, 1946) would predict that the perception of an initial central trait would determine the later attributions of other more peripheral traits. Indeed, Ss provided with the image of a 'cold' therapist reported perceptions which were significantly different from those of Ss who were presented with 'warm' descriptions. While this may have been coincidental, its occurrence is consistent with what Asch and Kelly would predict. It seems that the phenomena described by Asch and Kelly which occurs in a variety of interpersonal setting also occurs in the behavior therapy analog situation described in this study. While this is not especially

startling, it does highlight some dynamics of behavior therapy, namely, that the central personality traits of the therapist are important in determining the client's over-all perceptions of not only the therapist, but also the procedure being used. To that degree it is important for the behavior therapist to understand his own basic stimulus value in order to fully understand the actions and reactions of the client.

This is made doubly important when Heider's (1958) balance theory is also taken into account. Balance theory would predict that the perceptions of the client or subject would be balanced. One indication of balance would be consistency between ratings of the therapist and ratings of the procedure, and this is exactly what was found in this study. Ss who felt negatively toward the trainer also held similar views on the technique being used and which were supposedly being subscribed to by the trainer. Likewise, Ss who reported favorably about the relaxation training technique also reported favorable about E. While the reasons for this concordance are unclear, there does appear to be a balance between the Ss' ratings of E and the ratings of the technique. The flaws in the study prevent the firm conclusion that perceived warmth determines the perceived effectiveness of the technique. What can be concluded, however, is that the phenomena

of the type described by Kelly, Asch and Heider, all seem to be occurring in the behavior modification situation, and that these phenomena should be taken into account and investigated.

In considering continued investigation of this area, and of first impressions in general, it is important to account for the expectancies of the subjects and their attitudes toward certain therapeutic and interpersonal issues. If, for instance, the subject believes that a therapist should be cold, analytical, and directive, then the perception of a warm therapist may be disappointing, and the client is apt to perceive the therapist as inadequate or inept. If, on the other hand, a subject expects a warm, supportive, and empathic therapist, and actually perceives coldness in the therapist, this may lead to a negative appraisal of the therapist and his technique. While the latter condition is the one usually assumed to be the prevalent state of affairs in therapy research, it is also important to consider the former possibility. What this suggests is that subject's attitudes and expectancies be assessed prior to the intervention to determine to what extent the experimental description of the therapist fits the subjects expectations. It is possible that it is the degree of 'fit' and not the degree of perceived warmth which determines the effectiveness of relaxation training.

Other precautions should also be followed such as pre-testing and matching subjects for trait anxiety and physiological arousal. Obviously the room temperature should also be contained within normal limits. It may also be interesting to place the warm-cold statements in therapist personality descriptions of varying lengths and complexities to determine if the warm-cold information becomes more important in the absence of other relevant information. This would provide information on the importance of both the quantity and quality of personality information in effecting subjects' reactions to the relaxation training. While these modifications would be more elaborate than the present study, they may provide a better understanding of the importance of perceived therapist warmth on the effectiveness of behavior modification techniques.

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PART ONE

INSTRUCTIONS: Fill in your name and age on the answer sheet before you start. Below are a number of questions about how you feel now. Read each question and mark the appropriate space on the answer sheet according to the code given below. Do not spend too much time on any one question, but give the answer which seems to describe your present feelings best.

ANSWER CODE

- 1 - 'not at all'
- 2 - 'a little'
- 3 - 'somewhat'
- 4 - 'quite a bit'
- 5 - 'very much so'

- 1. Do your palms feel wet and clammy?
- 2. Is your heart pounding or running fast?
- 3. Does your stomach feel as though it were tied in a knot?
- 4. Are your hands unsteady and shaky?
- 5. Does your breathing seem fast and shallow?
- 6. Do your muscles feel tense and hard?
- 7. Do you feel as though you would like to leave and go for a walk?
- 8. Are you so anxious that you are having trouble sitting still?
- 9. Do you have butterflies in your stomach?
- 10. Do you feel frightened or threatened?
- 11. Do your 'insides' feel tight and ill at ease?
- 12. Do you feel as though you just exercised vigorously?
- 13. Do you feel like running and getting away?
- 14. Do you suddenly feel as though you have to go to the bathroom?
- 15. Do you feel hot and sweaty?
- 16. Do you feel uncomfortable?

Please go on to the next questionnaire.

PART TWO

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then mark the appropriate space on the answer sheet, (according to the new code given below), to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to best describe how you generally feel.

ANSWER CODE

- 1 - 'almost never'
- 2 - 'sometimes'
- 3 - 'often'
- 4 - 'almost always'

- 17. I feel pleasant.
- 18. I tire quickly.
- 19. I feel like crying.
- 20. I wish I could be as happy as others seem to be.
- 21. I am loosing out on things because I can't make up my mind soon enough.
- 22. I feel rested.
- 23. I am "calm, cool and collected".
- 24. I feel that difficulties are piling up so that I cannot overcome them.
- 25. I worry too much over things that don't matter.
- 26. I am happy.
- 27. I am inclined to take things hard.
- 28. I lack self-confidence.
- 29. I feel secure.
- 30. I try to avoid facing a crisis or difficulty.
- 31. I feel blue.
- 32. I am content.
- 33. Some unimportant thought runs through my mind and bothers me.
- 34. I take disappointments so keenly that I can't put them out of my mind.
- 35. I am a steady person.
- 36. I get in a state of tension or turmoil as I think over my recent concerns and interests.

Please place the questionnaires and answer sheet to one side and read the introductory statement.

Relaxation Training Session Number One

During the next twenty minutes we are going to work at making your body relax. As we do so I would like you to follow my instructions as best you can, concentrating on your body and your muscles and on making them feel loose and relaxed. Let's begin.

Settle back as comfortably as you can and make yourself relax. Forget about everything except what is going on right now. As you relax I want you to clench your right fist. Clench it tighter and tighter and study the tension in that hand as you do so ... keep it clenched and feel the tension in your right fist...hand... forearm...now relax your fingers and let your hand become loose and relaxed...let yourself relax all over, and feel the tension flowing out of those fingers and out of your hand...your palms...and the back of your hand...Now as you are feeling the relaxation in your hand I want you to clench your right fist again...clench it as tight as you can and feel the tension in all the muscles in your fingers and all over your hand...now relax...loosen up your fingers and feel the tension flow out of your hand...enjoy the contrast...feel the tension flow out of your hand...enjoy the contrast...feel the little bit of tension that is left and make that tension flow out of your hand...Let your hand just sit there totally relaxed, and while it is relaxing make your left hand feel just as relaxed as your right hand...feel the tension that is in that left hand and make it go away. Start with your thumb, feel the muscles and make your thumb go loose and relaxed...now your index finger...middle finger...ring finger...little finger...Feel the relaxation in the fingers of both your hands, and let the relaxation flow down into your palms and the backs of your hands...feel the tension and make it go away...your hands are becoming loose and comfortable. Now that your hands are relaxed I want you to tense up all the muscles in your arms...make them as stiff and as tight as you can...make both of them rock hard and feel the tension in these muscles...in your forearms...triceps...let them relax...let them go limp and let all the tension flow out of them...feel the relaxation...feel the looseness...they feel limped and relaxed...now tense them again...make them hard and solid and feel the tension there...now let them relax, just let them lie there on the couch...feel the tension flow out and feel the looseness flow in...as your muscles relax concentrate on the muscles in your forearms...as they relax make the tension go out of them and just let lie there on the couch...feel the muscles in your triceps

and make them relax and let them feel loose and limp... Now I want you to start at your finger tips and make your hands and your arms relax even more, starting with your finger tips make your hands relax, feel the little bit of tension that is left and make the tension go away...they are feeling looser and less tense...let the relaxation spread into your wrists...both your hands feel totally relaxed and totally at ease. Now let the relaxation spread into your arms...work at making them relax and work at achieving a deeper level of relaxation...Let your forearms relax...your elbows...triceps...both your arms are totally relaxed...your arms are relaxed and as they become even more relaxed make the relaxation spread into your shoulders. Make the muscles there go loose and limp and relaxed...make yourself aware of what these muscles feel like...make yourself aware of the tension and make the tension go away...all the muscles in your arms and shoulders are becoming loose and relaxed, and the relaxation is growing deeper with every breath you take...concentrate on what relaxation feels like and make yourself relax.

Let all your muscles relax, go loose and limp... settle back and relax...feel the relaxation in your hands... arms...and shoulders.

Wrinkle up your forehead now...wrinkle it tighter... feel the tension...now stop and relax and smooth it out... feel your entire forehead and scalp become smoother as the relaxation increases...feel the ease, feel the looseness...now frown and crease your brow and study the tension... feel the tightness...let go of the tension again and smooth out your forehead...feel the muscles in your forehead become loose, limp and relaxed...now close your eyes tight... tighter...feel the tension in your eyelids...now relax your eyes...keep your eyes closed gently, comfortably, and feel the relaxation...feel the relaxation in your forehead and your eyes, and as you do so clench your jaws...bite your teeth together and study the tension throughout the jaws...now let your jaws relax and enjoy the difference... and as your forehead, eyes, and jaw all relax you can still feel the relaxation in your hands and your arms, and shoulders...now press your tongue hard against the roof of your mouth and feel the tension...harder...feel the tension... now relax and enjoy the contrast...your tongue feels loose and relaxed...now press your lips together hard...study the tension...now relax and study the relaxation...Now that you know what tension and relaxation feel like relax your whole face...you can feel the relaxation throughout your mouth, jaws, forehead, eyes and your whole head...the relaxation progresses deeper and deeper...your whole head feels

relaxed...all your muscles are loose and limp...Now concentrate on what your face and your head feel like and notice where there is still some tension and make that tension go away.

Now press your head back as far as it will go...feel the tension in the neck...and relax...feel the relaxation as the tightness disappears...Now bring your head onto your chest as hard as you can...again you can feel the tension...and relax. Let your head and your neck relax together...as your head lays on the couch it feels heavy and comfortable...As your muscles are relaxing make yourself aware of how your upper back feels...feel the tension in those big muscles and make them relax...make them go loose and limp and relaxed...make them go loose and limp...make the tension flow out of them the same way you made your other muscles relax...now go back to your hands and deepen the relaxation there and work your way up your arms into your head, down your neck and into your back, make them all relax together, go ahead...

Now that you know what relaxation feels like go back and pick up the muscles that are not quite totally relaxed as the others and make them relax...make the tension flow out of these muscles...the whole upper part of your body feels relaxed and at ease...as you lie there relaxing concentrate on how good it feels to just sit and relax...think about what it feels like to make tension go away and to relax...

Okay, now it is time to stop. Open your eyes slowly, sit up in the chair, and wait for your trainer to come in.

Relaxation Training Session Number Two

Now let's begin. Settle back as comfortably as you can. Stretch out and close your eyes. As you relax clench your right fist...clench it tighter and tighter and study the tension as you do so...now relax...let the fingers on your right hand stretch out and enjoy the contrast as the tension leaves and the relaxation settles in...now let yourself go and become more relaxed all over...Now once again clench your right fist as tight as you can...hold it and notice the tension...now let go and relax...let your fingers straighten out and notice the difference once more...feel the relaxation in those muscles and as that hand relaxes concentrate on your left hand...feel those muscles and notice

the tension and make it go away in your thumb...index finger...middle finger...ring finger...small finger...The fingers on both your hands are now relaxed with most of the tension gone...Let the relaxation flow into your hands...feel the tension and make it go away...continue relaxing your hands more and more...Now tighten the muscles in both your arms...Make them tight and rigid...feel the tension...and relax. Enjoy the difference...now repeat that once more...tighten up both your arms and make them hard...concentrate on what the tension feels like...now relax and notice the difference...feel the tension flow out of those arms as the relaxation flows in...make them relax more and more, lay them out on the couch totally relaxed...let the relaxation develop...Now once more tighten the muscles in both your arms and make them hard...hold it...and relax...let them drop and enjoy the difference...You can feel the opposite of tension, relaxation flowing into your arms...As you feel the relaxation in your hands...wrists...arms...concentrate on the relaxation in your whole arm as a whole...they are comfortable and relaxed...Even when your arms feel totally relaxed try to go that extra bit further to achieve deeper and deeper levels of relaxation...Now let all your muscles go loose...Wrinkle up your forehead...tighter...now relax and smooth it out...your entire forehead feels smoother as the relaxation increases...Now frown and crease your brows...study the tension...let go and smooth out your brows and forehead once more...Feel the relaxation all through the muscles in your scalp...now close your eyes tighter...hold them very tight...feel the tension...now relax, keep your eyes closed gently and comfortably and notice the relaxation...Now clench your jaws...bit your teeth together and study the tension throughout the jaws...relax your jaws...appreciate the relaxation...Now press your tongue against the roof of your mouth and feel the tension...now let your tongue return to a comfortable and relaxed position...notice the relaxation and enjoy it...Now purse your lips...press them tighter and tighter and tighter...now relax your lips and notice the tension disappearing and the relaxation setting in all over your forehead...scalp...eyes...jaws...lips...tongue...and throat...The relaxation progresses further...now press your head back as far as it will go and feel the tension in your neck...now relax...now bring your head forward and press it against your chest...now let it return to a comfortable position...feel the relaxation, and notice how it feels different from the tension...let the relaxation develop...now shrug your shoulders right up and hold the tension...drop your shoulders and feel the relaxation...feel the little bit of tension left in your shoulders and upper back and make that tension go away...Let the relaxation spread through the muscles in your upper back and let those muscles go limp and relaxed...

along with the muscles in your face, hands...arms...and hands.

As the relaxation grows through the muscles the comfort progresses deeper...deeper...and deeper...

Relax your entire body to the best of your ability. Feel that comfortable heaviness that accompanies relaxation. Breathe easily and freely in and out. Notice now the relaxation increases as you exhale...As you breathe out just feel that relaxation...now breathe right in and fill your lungs...inhale deeply and hold your breath...study your tension...now exhale...let the walls of your lungs and chest grow loose and push the air out automatically...continue relaxing and breathe freely and gently...feel the relaxation and enjoy it...with the rest of your body as relaxed as possible fill your lungs again. Breathe in deeply and hold it again...good. Breathe out and appreciate the relief...just breathe normally. Continue relaxing your chest and let the relaxation spread into your back, shoulders, neck, arms, and hands...Merely let go and enjoy the relaxation...Now let's pay attention to your abdominal muscles. Make your abdomen hard...study the tension...and relax. Let the muscles loose and appreciate the difference...Once more press and tighten the stomach muscles...hold the tension...now release it and relax...Notice the general well-being that comes with relaxing your stomach...Now draw your stomach in again...draw your muscles right in and feel the tension that way...now relax again, let your stomach out. Continue breathing normally and feel the gentle massaging action all over your chest and stomach. Now pull your stomach in again and hold the tension...and release the tension...let the relaxation dissolve as the relaxation grows deeper and deeper...Each time you breathe out notice the rhythmic relaxation both in your lungs and in your stomach...notice how your chest and your stomach relax more and more...Try to let go of all contractions anywhere in your body...Now direct your attention to your lower back...Arch up your back and make your lower back quite hollow and feel the tension all along your spine...settle down comfortably again relaxing the lower back...Now arch up again and feel the tension again...hold it...relax once more...relaxing further and further...relax your lower back...relax your upper back...spread the relaxation into your stomach... into your chest, shoulders...arms...and facial area. These parts relaxing further and further, deeper and deeper...

For the remaining time we are not going to tense anymore muscles. Instead we are just going to concentrate on relaxing your muscles, making them more loose and more relaxed.

With every breath you take you are becoming more relaxed and very much at ease. It feels very comfortable to lie there on the couch, very secure, and you can feel your body relaxing more and more...Make yourself aware of where the tension is in your body and make that tension go away. ..continue relaxing...every muscle in your hands, arms, neck, head, chest, stomach and back is loose and relaxed, feeling almost like limp rags...Now I am going to count backwards from ten to zero, and every time I count a number your muscles are going to feel more relaxed and more at ease...Ten...you feel relaxed but there is still some tension left around your body and you are going to make this go away...Nine...your muscles are becoming more relaxed and at ease...eight...seven...with every breath you take more tension flows out of your body...six...you can locate tense areas and make them relax...five...you are becoming deeply relaxed and more comfortable with less and less tension...four...three...you feel totally secure and loose...two...you are almost completely relaxed...one...all the muscles in your body are relaxed and comfortable, and you can just lie there and appreciate the relaxation...

Now it's time to stop. Open your eyes slowly and sit up in the chair when you are ready, and wait for your trainer to come into the room.

Relaxation Training Session Number Three

Settle back as comfortably as you can. Let yourself relax to the best of your ability. As you relax like that clench your right fist, just clench your fist tighter and tighter and study the tension as you do so...now relax. Let the fingers in your right hand relax and notice the difference in your feelings...let yourself go and try to become more relaxed...once more clench your right fist really tight and notice the tension...Now let go and relax. Your fingers straighten out and you notice the difference once more...As your right hand relaxes make your left hand relax also...feel how relaxed your right hand is and make your left hand relax just as much...As your left hand relaxes with your right, tense up the muscles in your arms...make them hard and notice the tension...now relax...Let the relaxation develop...now once more tense the muscles in your arms...harder...study the tense feelings...let your arms rest on the couch and relax. Make your arms comfortable and let the relaxation develop on it's own. Your arms should feel comfortably heavy as you

let them relax further and further...Even when your arms feel fully relaxed try to go that extra bit further; try to achieve deeper levels of relaxation...Wrinkle up your forehead now; wrinkle it tighter...And now stop wrinkling your forehead, relax and smooth it out. Picture the entire forehead and scalp becoming smoother as the relaxation increases...Now frown and crease your eyebrows and study the tension...let go of the tension again. Smooth out the forehead once more...Now close your eyes tighter and tighter...feel the tension...and relax eyes. Keep your eyes closed gently and comfortably, and notice the relaxation...Now clench your jaws, bite your teeth together; study the tension throughout the jaws...Relax your jaws now. Let your lips part slightly...Appreciate the relaxation...Now press your tongue hard against the roof of your mouth...Look for the tension...All right, let your tongue return to a comfortable and relaxed position...Now purse your lips, press your lips together tighter and tighter...relax the lips...Note the difference between tension and relaxation. Feel the relaxation all over your face, all over your forehead and scalp, eyes, jaws, lips, tongue, and throat...The relaxation progresses further and further...Now attend to your neck muscles. Press your head back as far as it will go and feel the tension in your head and neck. Let your head return to a comfortable position and study the relaxation. Let the relaxation develop...Shrug your shoulders, right up. Hold the tension...Drop your shoulders and feel the relaxation...Neck and shoulders relaxed...Shrug your shoulders again and move them around. Bring your shoulders up and forward and back. Feel the tension in your shoulders...and relax once more...Let the relaxation spread deep into your shoulders and back. Relax your neck and throat, and your jaws, and other facial areas as the pure relaxation takes over and spreads deeper...deeper...and deeper...

Now breathe easily in and out. Notice how the relaxation increases as you exhale...as you breathe out just feel the relaxation...Now breath right in and fill your lungs; inhale deeply and hold your breath. Study the tension...Now exhale, let the walls of your chest grow loose and push out the air automatically. Continue relaxing and breathe freely and gently...Feel the relaxation and enjoy it...With the rest of your body as relaxed as possible fill your lungs again. Breathe in deeply and hold it again...That's fine, breathe out and appreciate the relief. Just breathe normally. Continue relaxing your chest and let the relaxation spread to your back and your shoulders, neck and arms. Merely let it go...and enjoy the relaxation. Now let's relax your stomach and abdomen. Tighten your stomach muscles,

make the abdomen hard, notice the tension...And relax. Let the muscles loosen and notice the contrast. Once more press and tighten your stomach muscles. Hold the tension and study it...and relax...Notice the general well-being that comes with relaxing your stomach...Now draw your stomach in, pull the muscles in and feel the tension this way... Now relax again. Let your stomach out. Let the tension dissolve as the relaxation grows deeper. Each time you breathe out notice the rhythmic relaxation both in your lungs and in your stomach...Notice how your chest and stomach relax more and more...Now direct your attention to your lower back...arch it up so that it is hollow underneath...notice the tension...and relax...Settle comfortably relaxing your lower back. Relax all your muscles together from your waist up...just let them go totally limp and loose, and enjoy the relaxation...

Now flex your buttocks and legs, make them hard and solid and study the tension...now let them relax and notice the difference...Now tense them again and feel the tension in those muscles...hold...and relax...Allow the relaxation to proceed on it's own...Press your feet and toes downward away from your face so that the calf muscles become tense. Study that tension...Relax your feet and calf...This time bend your feet toward your face and feel the tension along your shins. Bring your toes right up...Relax again. Keep relaxing for a while...Now let yourself relax even further all over...Relax your feet, ankles, calves, and shins, knees, thighs, buttocks and hips. Feel the heaviness of your lower body as you relax further and further...Now spread the relaxation to your lower back and waist. Let go more and more. Feel that relaxation all over. Let it proceed to your upper back, chest, shoulders, and arms and right to the tips of your fingers. Keep relaxing more and more deeply. Relax your jaws and all your facial muscles. Now you can become twice as relaxed as you are now simply by taking a really deep breath and slowly exhaling. Breathe in deeply and feel yourself becoming heavier and heavier. Take in a long deep breath and let it out very slowly... Feel how heavy and relaxed you have become.

Now I am going to count backwards from ten to zero, and each time I say a number you will feel more relaxed. Ten... you feel loose and heavy. Your muscles are relaxed and at ease...Nine...you feel as though you are sinking into the chair, becoming heavier and heavier...Eight...any parts of your body which still have a little tension are becoming more relaxed and you can feel the tension flowing out as the relaxation pours in...Seven...Six...you feel as though you couldn't move now if you wanted to. You feel limp and

loose....Five....each number you hear makes you feel more relaxed and less tense....Four....Three....your muscles are totally relaxed, you feel completely at ease....Two....You are now almost totally relaxed in every muscle in your body....One....you now feel completely relaxed. It feels very good to rest like this, so now just allow yourself to rest and enjoy the comfort....with each breath you take you become more relaxed. Just relax and enjoy it.

It is now time to stop....Open your eyes slowly and sit up. Wait for the experimenter to come into the room.

PART THREE

INSTRUCTIONS: Below are a number of questions about how you feel now. Read each question and mark the appropriate answer on the answer sheet according to the answer code given below. Do not spend too much time on any one question but give the answer which best describes your present feelings.

ANSWER CODE

- 1 - 'not at all'
- 2 - 'a little'
- 3 - 'somewhat'
- 4 - 'quite a bit'
- 5 - 'very much so'

- 37. Do your palms feel wet and clammy?
- 38. Is your heart pounding or running fast?
- 39. Does your stomach feel as though it were tied in a knot?
- 40. Are your hands unsteady and shaky?
- 41. Does your breathing seem fast and shallow?
- 42. Do your muscles feel tense and hard?
- 43. Do you feel as though you would like to leave and go for a walk?
- 44. Are you so anxious you are having trouble sitting still?
- 45. Do you have butterflies in your stomach?
- 46. Do you feel frightened or threatened?
- 47. Do your insides feel tight and ill at ease?
- 48. Do you feel as though you just exercised vigorously?
- 49. Do you feel like running and getting away?
- 50. Do you suddenly feel as though you have to go to the bathroom?
- 51. Do you feel hot and sweaty?
- 52. Do you feel uncomfortable?

Please go on to the next questionnaire.
You no longer need your answer sheet so
please place that to one side.

POST-SESSION QUESTIONNAIRE

Below are some questions about your experiences with the relaxation training procedure and with your trainer. Please be as honest as possible but do not spend too much time on any one question. Mark your answers on the question sheet.

1. How was the pace of the training? (circle one)

SLOW-----FAST

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

2. How competent did your trainer seem?

INCOMPETENT-----COMPETENT

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

3. How relaxing was the hour?

RELAXING-----USELESS

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

4. How effective was the procedure over-all?

INEFFECTIVE-----EFFECTIVE

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

5. How helpful was the trainer?

HELPFUL-----UNHELPFUL

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

6. How comfortable were the earphones during the hour?

UNCOMFORTABLE-----COMFORTABLE

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

7. How would you rate the clarity of the instructions?

CLEAR-----UNCLEAR

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

8. During the training did you feel like;

QUITTING-----NOT QUITTING

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

9. How did the trainer seem to you?

WARM-----COLD

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

10. For the most part did the training seem;

BORING-----ENJOYABLE

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

11. Over-all how would you rate your trainer.

BAD-----GOOD

1	2	3	4	5	6
very	moderately	somewhat	somewhat	moderately	very

12. How comfortable were the electrodes during the hour?

COMFORTABLE-----UNCOMFORTABLE

1	2	3	4	5	6
very	moderately	somewhat	somewhat	moderately	very

13. How would you rate your trainer's style?

APPROPRIATE-----INAPPROPRIATE

1	2	3	4	5	6
very	moderately	somewhat	somewhat	moderately	very

14. How would you rate the atmosphere of the experiment?

TENSE-----RELAXED

1	2	3	4	5	6
very	moderately	somewhat	somewhat	moderately	very

15. If you had a problem, would you feel comfortable bringing it to your trainer if you had the chance.

NO-----YES

1	2	3	4	5	6
very	moderately	somewhat	somewhat	moderately	very

16. How do you think this experiment is using your time?

WASTE OF TIME-----GOOD USE OF TIME

'	1	'	2	'	3	'	4	'	5	'	6	'
'	extreem	'	moderate	'	mild	'	mild	'	moderate	'	extreem	'

17. How would you rate the trainer on the following scales?

FORMAL-----INFORMAL

'	1	'	2	'	3	'	4	'	5	'	6	'
'	extreem	'	moderate	'	mild	'	mild	'	moderate	'	extreem	'

18. CONSIDERATE OF OTHERS-----SELF-CENTERED

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

19. PROUD-----MODEST

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

20. GOOD NATURED-----IRRITABLE

'	1	'	2	'	3	'	4	'	5	'	6	'
'	very	'	moderately	'	somewhat	'	somewhat	'	moderately	'	very	'

This concludes this session of the experiment. Please call your trainer to tell him you have finished. Thankyou.

