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THE PSYCHOTHERAPEUTIC VALUE OF SUBJECTIVE UNITS OF DISTURBANCE

by

BRYAN A. HIEBERT

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled The Psychotherapeutic Value of Subjective Units of Disturbance

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in partial fulfillment of the requirements for the degree of Master of Education in Counseling.

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ABSTRACT

The present study investigates the hypothesis that people who are taught to cognitively self-monitor their anxiety level will experience an anxiety decrement. Thirty-two Summer session students, solicited from undergraduate educational psychology courses received instruction in the cognitive monitoring of emotional state using Wolpe's (1969) notion of the subjective unit of disturbance. Pretreatment, post-treatment and follow up assessment of anxiety level was obtained using the IPAT Self Analysis Form (Cattell, 1957). In addition, a subjective assessment of change in anxiety level was obtained: the subjects reported (by giving the appropriate number of subjective units of disturbance) any perceived change in anxiety level. The *t*-test comparisons of pretreatment-posttreatment-follow up assessment of anxiety level, and treatment-control group results indicate a significant ($p \leq .05$) decrease in anxiety level for treatment subjects.

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TABLE OF CONTENTS

TABLE OF CONTENTS CONTINUED

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Dusk is descending on the crowded city. A lone figure is making his way along the narrow lane which leads up the hill. Long, gloomy shadows slink along the high fence which borders both sides of the lane. The quietness is broken as a truck accelerates up the lane. The man turns. A large diesel, pulling an unusually wide load, is squeezing up the lane towards him. He begins to run, searching desperately for an opening in the fence.

In another part of the city, a second person is sitting relaxing beneath a tree. It has been a sunny, warm day, with just a touch of breeze in the air. The peaceful introspections and pleasant interactions that encompassed the pursuits of the day drift slowly through his mind as he sits relaxing.

While we can readily identify with the contrasting emotional levels represented in the above illustrations, the infinity of points along the progression from total relaxation to unrestrained anxiety are not so easily identified. Few people would experience a state of relaxation without correctly identifying it as such. However, an increase in anxiety level often goes unnoticed until it reaches extreme proportions. This extreme level of anxiety usually results in maladaptive behavior. Such a response could possibly have been avoided if the person had been aware of his increasing anxiety level and reacted earlier.

Recent studies suggest that the incidence of anxiety in our

society is growing, and that people are becoming more aware of the degree to which anxiety is affecting their lives (Behnke & Carlile, 197[illegible], Bowersock, 1974). Although most therapeutic orientations suggest methods for the treatment of anxiety, the proposed techniques exact a [illegible] it becomes appropriate to explore more efficient, or at least more economical, treatment methods.

The Problem

One aspect of behavior therapy, systematic desensitization, has undergone particularly extensive research. Studies have explored the necessity of relaxation in the desensitization process (Rachman, 1965), the relative effectiveness of various methods of hierarchy construction (Emery & Krumboltz, 1967), and hierarchy presentation (O'Neil & Howell, 1969). More recently, perhaps in the interests of more efficient use of counselor time, the effectiveness of desensitization in a group setting has also been explored (Paul & Shannon, 1966).

However, one aspect of desensitization remains relatively unresearched. Wolpe (1958, 1969), advocates determining an individual's anxiety level in various anxiety evoking situations in order to foster a smooth progression through the desensitization hierarchy. To facilitate this process, Wolpe devised the *Subjective Anxiety Scale*. This scale is widely recommended for use with desensitization (Emery, 1969; Marquis *et al.*, 1971; Wolpe, 1958, 1969) and has been used empirically as a measure of anxiety decrement (Galassi & Galassi, 1974). However, a survey of the literature, and personal correspondence with practicioners likely to be aware of any research in this area (see Appendix A), failed to reveal any report concerning the therapeutic

Value of the *Subjective Anxiety Scale*.

Subjective Units of Disturbance

The *Subjective Anxiety Scale* is an ordinal scale ranging from 0 to 100 [illegible] are designated by subjective units of disturbance (SUDS). To develop a SUDS scale the client is asked to label various anxiety evoking situations with respect to the amount of disturbance (*i.e.*, the number of SUDS) they evoke. In the introductory illustration, the anxiety level of the person in the first situation would be close to 100 SUDS, while the second person would likely be experiencing 0 SUDS. Figure 1 illustrates how typical situations might be represented.

100 - trapped in narrow lane with truck
90 - watching a horror movie
80 - driving in heavy traffic
70 - addressing a large convention
60 - sitting for a final exam (ill-prepared)
50 - answering a question in class
40 - waiting in the dentist's office
30 - meeting fiance's parents
20 - waiting for your wife who is 20 minutes late
10 - sitting for a final exam (well-prepared)
0 - relaxing in the sun

Figure 1. Representation of typical situations on the *Subjective Anxiety Scale*.

The notion of SUDS is used during hierarchy construction to assist the client in ordering the intensity of different anxiety evoking situations. Attaching a SUD number to the hierarchy items provides some assurance that the difference in anxiety level between consecutive hierarchy items will not be large enough to deter progress through the hierarchy once desensitization has begun. Because the ordering procedure forces the client to look at his anxiety in more objective terms, it is possible that the SUDS process could account for some of the therapeutic benefits resulting from desensitization, *i.e.*, that the SUD plays a more important role in the desensitization process than researchers have here-to-fore admitted. Until the therapeutic value of SUDS is researched, one can only speculate concerning the role it plays in systematic desensitization.

Rationale for Investigation

Some researchers, while not questioning the observation that desensitization does work (*i.e.*, members of a treatment group usually experience anxiety reduction), have suggested that the theoretical rationale might be different than that postulated by Wolpe (Lang, 1969; Wilkins, 1971). Lang (1969) suggests that perhaps desensitization teaches the client to discriminate the degree of threat in anxiety inducing stimuli that formerly evoked only a general avoidance response. Valins (1970) states that while systematic desensitization can be explained by reciprocal inhibition, or counter-conditioning, a cognitive interpretation based on the perception and labeling of bodily states is also plausible.

In line with such cognitive explanations, a treatment program designed to facilitate client proficiency in monitoring and labeling

anxiety level could have therapeutic value. Many writers allude to the possible therapeutic implications deriving from a greater cognitive awareness of ones emotional state (Leder, 1969; Valins, 1970). Some suggest that a process for identifying and labeling ambiguous emotional experiences might have therapeutic value (Schacter, 1966; Valins, 1970). A functional knowledge of SUDS could have the potential of satisfying both of these suggestions and could be a means for expelling some of the vague and nebulous mystique surrounding anxiety, thus placing anxiety in a more objective, treatable framework.

The present study tests the therapeutic efficacy of a treatment program designed to make clients proficient in monitoring their anxiety level via Wolpe's *Subjective Anxiety Scale*. The treatment program is essentially didactic in nature; designed to impart a behavioral view of anxiety, facilitate mastery of the conceptual framework surrounding SUDS, and permit learner participation in the application of SUDS to individual situations. The program is designed to operate in a group setting, thus affording efficient and economical use of counselor time, and a potential increase in the number of clients that could be treated.

CHAPTER 2

THEORETICAL SUPPORT

There is currently varied and discrepant opinion as to the etiology and nature of anxiety. Some of the confusion may be attributed to the psychologist's attempt to define more implicitly a colloquial term that is losely used to describe a wide variety of situations. This chapter contains an overview of some of the current ideas regarding the nature of anxiety. The chapter also presents the definition of the concept of anxiety underlying the present treatment program, and some of the popular viewpoints concerning the cognitive components of anxiety. These latter considerations should provide theoretical support for the treatment program.

Nature of Anxiety

Leavitt (1967) describes differing views on anxiety as fitting into one of three categories. Some theorists view anxiety as a personality trait. Others see anxiety as a transient state of emotional arousal, while a third group treat anxiety as a set of behavioral responses. However, most theorists, regardless of their position concerning the nature of anxiety, incorporate the notion of individual differences in anxiety level into their theoretical framework.

Cattell views anxiety essentially as a personality trait comprising qualities of tension, irritability, lack of self-confidence, unwillingness to take risks, tremor and various psychosomatic signs

(Cattell, 1957, pp. 255-256). Izzard (1972) claims the existence of nine major (fundamental) emotions: interest-excitement, anger, shame (shyness, guilt), distress, fear, disgust, contempt, enjoyment, and surprise. He sees anxiety as a process, influencing and interacting with other personality variables, involving fear and two or more of the emotions that precede it in the above list.

Spielberger (1966) views anxiety as a hypothetical construct characterized by subjective, consciously perceived feelings of apprehension, accompanied by arousal of the autonomic nervous system. He distinguishes between state anxiety (a condition within an organism that varies in intensity and fluctuates over time), and trait anxiety (a facet of personality involving individual differences in anxiety state). He illustrates the difference by saying that, "Mr. Smith is anxious", could mean either, "Mr. Smith is anxious <u>now</u>", or, "Mr. Smith is an <u>anxious person</u>".

Others (Eysenck, 1969; Hamilton, 1969; Malmo, 1972) suggest that the "distinguishing feature of pathological anxiety is that the person afflicted reacts to ordinary life situations as though they were emergencies." (Malmo, 1972, p. 976). Hamilton (1969) attributes this to reduced threshold level so that a stimulus which is not intense enough to elicit anxiety in a normal person gives rise to considerable anxiety in an anxious person. Alexander (1972) reports that because of the intensity of the response and the persistence of the disturbed state, it takes longer for maladjusted individuals to recover from stimulation (as evidenced by their arousal level returning to normal). Lazarus and Averill (1972) view anxiety as resulting when a person's cognitive systems no longer enable him to relate meaningfully to the

world about him. Grinker (1966) posits that anxiety operates on a postive feedback model, where people become more anxious as they perceive their own inability to control anxiety. When viewed from such perspectives, anxiety tends to be seen as a transient state of heightened emotional experience.

Psychologists with a more behavioral perspective tend to view anxiety as a group of conditioned responses that an organism makes under certain stimulus conditions (Eysenck, 1961, 1967, 1969; Lundin, 1969; Wolpe, 1958, 1969). Such a position incorporates the view that anxiety as a learned phenomenon results when a neutral stimulus is followed by an aversive situation (Lundin, 1969, p. 175). For example, a boy who is walking in the park and is attacked by a dog, may experience anxiety on subsequent visits to the park.

Eysenck (1969) views anxiety as a unique emotion, in that it functions as a secondary drive and also as a source of secondary reinforcement. Neutral stimuli associated with pain (pain reduction being a primary drive) give rise to a conditioned fear response very similar to the response to pain. This conditioned fear response is called anxiety, and decreasing the intensity of the anxiety is reinforcing. Since anxiety is a secondary drive, the general laws relating to drives also apply to anxiety. Among the many such laws that Pavlov proposed, is the Law of Strength which states that the strength of the response depends on the strength of the stimulus. Eysenck suggests that anxious persons perceive anxiety evoking stimuli more strongly than normal persons and therefore tend to over-react to what most people consider a normal situation.

Wolpe (1958, 1969) sees anxiety as resulting from two types of

situations: those involving difficult discriminations, and exposure to noxious stimulation. He equates anxiety to the autonomic response pattern, or patterns, that are characteristically part of the organism's response to noxious or ambivalent situations.

Definition of Anxiety

Malmo (1972) defines anxiety as resulting from prolonged exposure to threatening or extremely demanding situations. He sees anxiety and arousal as being distinct in that the former deals with a psychological process, while the latter deals with a psychophysiological process (p. 970). Although this distinction receives rather widespread support in the psychophysiological literature (Alexander, 1972; Lader, 1972), Alexander (1972) claims it is somewhat artificial, for attempts to relate physiological functions to psychological functions may represent nothing more than a search for equivalent languages to describe one and the same organismal processes (p. 929). For the purpose of the present study, arousal is seen as subsuming anxiety, in that while an organism may be aroused without experiencing anxiety, anxiety is always accompanied by an increase in arousal level. Moreover, an increase in anxiety level may be detected by attending to many of the cues that accompany physiological arousal.

Wolpe's view of anxiety is essentially an extension of the above position. According to Wolpe (1958), as drive states arise, they excite overt action. If the resulting behavior is adaptive, the drive state is dissipated. If the resulting behavior is unadaptive, the excitement is sustained, and becomes labeled anxiety. This state of sustained excitement often becomes conditioned to environmental events as the result of temporal contiguous association with these events.

The result is an increased tendency for persistent maladaptive behavior which is a characteristic of most neuroses.

The following example illustrates this process. A budding young graduate student has invited his thesis supervisor home for dinner. Naturally, the wife is somewhat nervous. She wants to make a good impression. She wishes to be regarded as an excellent cook and an intelligent conversationalist. She wants to ensure that the evening is not a failure, for that would lessen the professor's esteem for her husband and his work, and prolong their present state of financial deprivation. Her emotional state might be labeled as mildly fearful, and much of her activity during the afternoon and evening would be aimed at reducing this drive state. If the wife perceives the evening as progressing smoothly, her culinary expertise being acceptable, the conversation stimulating and a warm rapport developing among the members of the dinner party, the drive state diminishes and the wife begins to feel less apprehensive and more relaxed. However, if she perceives the meal as being unenthusiastically consumed, the conversation as boring and an uncomfortable feeling developing amongst the people in the room, the excitement will be sustained. This will likely prompt further activity designed to salvage the evening. If all efforts to make the evening a success are perceived as failing, the drive state which was sustained during the evening, would dissipate in time, but a return engagement would likely elicit anxiety. This anxiety would generalize to other situations (*e.g.*, having other people over for dinner), the intensity varying according to the degree of similarity between the new situations and the initial encounter.

The emotional experience of anxiety is similar to fear (Dustin,

1969). When only the physiological component of anxiety is considered, there is little or no difference between fear and anxiety (Gray, 1971; Leavitt, 1967; Wolpe, 1958). However, a distinction can be made between anxiety and fear (Dustin, 1969; Izzard, 1972; Leavitt, 1967; Lundin, 1969; Wolpe, 1958) based on the situation in which the emotional experience occurs, and the extent to which the resulting behavior is adaptive (Epstein, 1972; Wolpe, 1958, 1969). If the situation involves real danger, then the emotional experience might be more appropriately labeled fear, and adaptive behavior is likely to result. However, if a situation presents no real danger, but the individual still feels afraid, then maladaptive behavior is likely to result. The emotional experience in this latter situation might more appropriately be labeled anxiety.

Cognitive Components of Anxiety

Although Wolpe's view of anxiety is based largely on the theoretical formulations of Pavlov and Hull, where cognition plays a relatively minor (or perhaps even irrelevant) role, many other researchers have attached more significance to the role of cognition. By manipulating sensory feedback so as to falsely indicate a state of physiological arousal, and observing subsequent subject reaction, Valins (1970) demonstrated that the perception, not just the occurrence, of bodily change is an important determiner of emotional experience. He suggests that since the perception of bodily change is such an important determiner, investigation should center around the cognitive consequences of bodily change. According to Valins (1966, 1970), perceived physiological changes give rise to cues which are cognitively represented as feelings. These feelings in turn result in further cognitive activity

geared towards attempting to identify the situation that percipitates them. In discussing the interaction between the cognitive and physiological components of anxiety, Schacter (1966) has claimed that perceived bodily sensations represent information which must be cognitively processed. He posits the existence of a drive to evaluate, understand, and label, ambiguous bodily states.

Similar positions are put forth by various other writers. Lazarus and Averill (1972) envision cognitive processes mediating between a situation and the organism's emotional response, the emotional response deriving from the person's appraisal of the situation. Leder (1969) suggests that morbid anxiety results from a state of hyperarousal, where the client has an inadequate cognitive structure (because of inadequate or distorted perceptual, verbal or non-verbal information cues). Therefore, the formulated goal for treating such a state should include lowering the clients level of activation, and developing a correct cognitive scheme.

Cognitive awareness of emotional state is the common theme uniting the above discussion. Based on such arguments, a program aimed at making people more aware of their level of arousal, and enabling them to label their emotional state, could provide a viable means for treating anxiety.

Smithies (1969) postulates a progressive series of behavioral reactions resulting from physiological arousal. The reaction progression begins with curiosity, and progresses through attention, fear, and finally results in panic, depending on the perceived intensity of the stimulus configuration (p. 33). In highly anxious individuals, this progression tends to be condensed: either an event elicits no anxiety,

or it elicits great anxiety, the intermediate steps in the arousal sequence pass largely unnoticed. Teaching an individual to monitor his anxiety level could have the effect of making him more aware of the intermediate steps in the arousal sequence, thus enabling him to react earlier in the arousal sequence, when his emotion is interfering less with his cognitive abilities.

The ideas discussed above provided the initial impetus for the present study. Based on such arguments, a program designed to give people a functional knowledge of the subjective unit of disturbance, as a means for monitoring and labeling their emotional level, could provide two major therapeutic benefits. The process of attaching a SUD number to one's emotional state could provide a facilitative vehicle for the "further cognitive activity" postulated by Valins (1966, 1970), and the "drive to evaluate, understand and label" posed by Schacter (1966). The process could provide a means for developing a cognitive scheme that would provide an adequate degree of correctness in the cognitive appraisal of anxiety evoking situations. Secondly, monitoring anxiety on the *Subjective Anxiety Scale* would assist persons in identifying those situations which elicit anxiety. The notion of SUDS could be instrumental in establishing a more accurate appraisal of the degree of anxiety experienced, and facilitating a greater awareness of the early stages of the arousal sequence (when the organism is just beginning to feel anxious), thus increasing the probability of a productive behavioral decision in an anxiety evoking situation.

CHAPTER 3

PROCEDURE AND DESIGN

The treatment program proposed in chapters one and two could have been designed and implemented in a variety of ways. In this chapter the author discusses the design for implementing and determining the effectiveness of the treatment program adopted in the present study. The hypotheses underlying the present study are listed and the sampling procedures and the research design are discussed. The methods for subjectively and objectively assessing change in anxiety level are elaborated and the rationale for using these procedures is discussed. In the final section a description of the treatment program is given and a brief summary of the three treatment sessions is presented.

Hypotheses

In order to assess the therapeutic value of the program mentioned earlier, the following hypotheses were generated.

1. That it will be possible, as evidenced by subjective self-report, to teach people to monitor their anxiety level on the *Subjective Anxiety Scale*.

2. That persons acquiring a functional knowledge of the subjective unit of disturbance will experience a reduction in anxiety, as evidenced by: (a) subjective self-report, (b) pretest-posttest score comparisons on an anxiety measure, and (c) treatment-control group score comparisons.

3. That the anxiety reduction will be retained over time, as evidenced by scores on a two week posttreatment follow up assessment

of anxiety level.

Sample

The sample consisted of 32 summer session students solicited from undergraduate educational psychology courses. The author obtained permission to address each class in order to explain the nature of the study and to ask for volunteers (see Appendix B for the text of this address). The subjects were randomly designated as belonging to group A or group B (see figure 2), and assigned to one of eight treatment groups on the basis of indicated preferred meeting time.

	I	II	III
Group A	waiting period	treatment period *	
Group B	treatment period *	follow up period	

Figure 2. Schedule for testing and treatment. Anxiety measures were administered at I, II, and III. A test for concept attainment was administered at *.

Research Design

Testing and treatment proceeded according to the schedule outlined in figure 2. A pretest was administered at I, after which group B received the treatment program. The initial waiting period for group A made possible a treatment-control comparison of the posttest results obtained at II. This second assessment of anxiety level provided an indication of change resulting from treatment for group B. The third

administration of the anxiety measure, occurring at III, was used to determine change in anxiety level resulting from treatment (group A), and indicate whether the change in anxiety level hypothesized for group B, was maintained over time.

Anxiety Measures

Measured change in anxiety level was procured from two sources; one subjective, the other objective.

Following treatment, the subjects were asked to indicate any perceived change in their anxiety level using the appropriate SUDS figure. This procedure has been previously reported (Galassi et al., 1974) as an effective indicator of perceived anxiety decrement. Furthermore, since the treatment program was designed to promote proficiency in monitoring anxiety level, it was logical to use that concept as a means for indicating perceived change in anxiety level.

The *IPAT Self Analysis Form* (here-in-after referred to as the IPAT) was used as the objective measure of anxiety level and was administered at the pretest, posttest, follow up periods indicated in figure 2. The IPAT is a 40 item inventory intended to measure manifest anxiety level, whether it is situationally determined or relatively independent of the immediate situation (Cattell & Scheier, 1963). It is recommended for use as a quick overall measure of anxiety level and as a screening device (Cattell & Scheier, 1963; Cohen, 1965; Guilford, 1959). The IPAT items come from a second-order, factor analysis of the 16 PF, which was also derived from factor analytic methodology (Cattell & Scheier, 1963; Cohen, 1965). On the basis of face validity, the 40 items are divided into two numerically equal groups: overt, indicating symptomatic anxiety, and covert, indicating anxiety that is not

consciously displayed. The test author recommends using the total score for clinical purposes and normative data is not given for the subscores.

Reports on the reliability of the IPAT range from .80 - .93, depending on the population and type of reliability in question. Split-half coefficients of .84 (with a normal population) and .90 (with a mixed normal and pathological population) are reported by Guilford (1959), while, a test-retest coefficent of .82 (four week test interval) is reported by Scheier (1967).

Validity claims for the IPAT derive from three sources, the first being the factor analytic nature of its derivation. Such procedures lead a "psychometric validity" (Cattell & Scheier, 1963, p. 6) to the IPAT. Secondly, construct validity coefficients of .85 - .90 have been obtained by comparing IPAT scores with objective tests and physiological measures (Cohen, 1965). A third validity indicator (labeled by the test author as "External Concrete Validity on a Psychiatric Criterion") was obtained by comparing IPAT scores with psychiatric consensus, yielding validity coefficients of .30 - .40. This "consensus of psychiatric diagnosis as to anxiety level correlates higher with scores on this anxiety test factor than with any other known personality factor" (Cattell & Scheier, 1963, p. 8).

Treatment Program

The treatment program followed a teaching paradigm adapted from Glasser (1962). Instruction consisted of a verbal and a programmed presentation, and endeavored to incorporate many of the principles that have been empirically demonstrated to influence the learning process.

Repetition has been demonstrated to be an important variable in the learning process (Logan, 1969). A variety of perceptual modes (*e.g.*, overhead transparencies, slides, visual imagery) and many examples illustrative of the concepts being taught, were incorporated in an endeavor to reduce possible stimulus satiation and maintain interest while providing for repeated exposure to the concepts in a variety of situations. In order to facilitate meaningfulness, each session included a review of previous sessions. To facilitate conceptual understanding, each session included specific question periods (in addition to a request that subjects pose questions as they arise), and time for the supervised practice of concept implementation.

The treatment program consisted of three sessions, scheduled within a two week interval. The three sessions are briefly summarized below. A complete script appears in Appendix C.

A treatment program began with the administration of the pretest, following by a verbal presentation dealing with the nature of anxiety and the concept of SUDS. The discussion of the nature of anxiety emphasized the learned aspects of anxiety, incorporating the etiology outlined by Wolpe (1958, 1969), namely, that anxiety stems either from involvement in situations where difficult discriminations must be made, or prolonged exposure to aversive stimulation. The physiological processes by which an organism becomes aroused was then discussed. The purpose was to: (1) illustrate how one part of a stimulus configuration becomes capable of eliciting the emotion that resulted from the total stimulus configuration, and (2) lend credence to the notion that the process of monitoring one's emotional level could reduce anxiety. The concept of SUDS was introduced as a method for monitoring arousal level,

and the expected therapeutic benefit of such monitoring was discussed, namely: (1) monitoring anxiety level could result in a decrease in neural activity associated with anxiety inducing situations, and (2) monitoring one's anxiety level should make one more aware of the early stages on the arousal sequence thus permitting a behavioral decision at a time when emotional level is not interfering so drastically with cognitive functioning. The first session concluded with the construction of individual *Subjective Anxiety Scales*, practice in attaching a SUDS label to specific imagined situations, and the instruction to monitor anxiety level at one hour intervals until the next session.

The second session began with an informal, intragroup discussion of the monitoring process. The conceptual framework upon which this study is based was then reviewed and a programmed sequence (see Appendix D) covering the material presented in the first session was administered. The subjects were then asked to monitor their anxiety level in several contrived situations. The second session concluded with the administration of the test of concept attainment (see Appendix E).

The final session began with informal group discussion of the effects of monitoring. During this discussion care was taken to correct any misconceptions evident from the responses on the test for concept attainment. The session ended by administering the posttest, asking the subjects to indicate with a SUDS number any perceived change in their anxiety level, and thanking them for their participation.

CHAPTER 4

RESULTS AND CONCLUSIONS

In this chapter, a statistical analysis of the results of this study is given. The discussion deals with each hypothesis in turn, giving the appropriate data and resulting conclusions.

Hypothesis #1

Hypothesis #1 states: that it will be possible, as evidenced by subjective self-report, to teach people to monitor their anxiety level on the *Subjective Anxiety Scale*.

Findings. At the completion of the treatment program, all subjects reported being able to monitor their anxiety level in the different situations in which they were involved, and expressed confidence that the SUD number they attached to the situation was a pretty good indicator of how they really felt. Thirty of the 32 subjects reported the concept of SUDS as being beneficial. Although not all 30 subjects reported an anxiety decrease, all felt that the increase self-awareness derived from monitoring their anxiety level was valuable.

Conclusion. In view of the above findings, Hypothesis number one is supported.

Additional findings pertinent to Hypothesis #1. A further demonstration of support for hypothesis #1 was obtained by comparing self-reported anxiety decrease to measured anxiety decrease. In cases where measured decrease in anxiety level was quite dramatic (*e.g.*,

three or four STENS) the self-reported anxiety decrease was also substantial (*e.g.*, 40 - 50 SUDS). Although this argument does not lie within the measurement framework of hypothesis #1, it does lend credence to the claim that people can be taught to monitor their anxiety level on the *Subjective Anxiety Scale*.

Hypothesis #2

That persons acquiring a functional knowledge of the subjective unit of disturbance will experience a reduction in anxiety, as evidenced by: (a) subjective self-report, (b) pretest-posttest score comparisons on an anxiety measure, and (c) treatment-control group score comparisons.

Findings. Upon completion of the posttest, all subjects were asked to indicate any perceived change in their anxiety level by giving the SUD number corresponding to their perceived change. Although not all subjects reported a decrease, none reported an increase in their general level of SUDS over the two week interval. Analysis of the self-reported change depicted a significant decrease in anxiety level for each group, $\underline{t}$ (15) = 4.46, $\underline{p} < .0005$ for group B, and $\underline{t}$ (15) = 5.56, $\underline{p} < .0005$ for group A. This would indicate that people completing the treatment program perceived a significant decrease in their general anxiety level.

The results of the objective anxiety measures concur with the subjective reports given above. Mean IPAT scores from the assessment periods referred to in figure 2 are given in Table 1. Analysis of test results indicate a significant difference between pretreatment and post-treatment IPAT scores for both groups, $\underline{t}$ (15) = 2.65, $\underline{p} < .02$ for group

TABLE 1

Mean Anxiety Scores for Both Groups on the Anxiety Measures

Group	Test Point I	II	III
A	28.50	30.00	24.69
B	38.63	33.56	30.69

Maximum Score = 80

Note: Group A functioned as a control group between assessments I and II. Group A received treatment between II and III. Group B received treatment between I and II. Group B was in a follow up period between II and III (see figure 2, p. 15).

B, and t (15) = 2.85, $p < .02$ for group A. This would indicate that the treatment program was successful in reducing anxiety. Analysis of the IPAT scores before and after the waiting period (group A) indicate no significant change in anxiety level. However, an analysis of covariance with the results obtained at test points I and II indicates a significant reduction in anxiety level for the treatment subjects, F (1, 29) = 3.89, $p < .05$.

Although the students were randomly assigned to either the treatment or control group, a t-test for independent samples conducted on the pretest scores (obtained at I) indicated that the mean anxiety level of group A was significantly lower than group B, t (30) = 2.43, $p < .03$. However, comparison of posttreatment scores obtained at II (*i.e.*, after group B had received treatment but group A had not)

depicted no significant difference in anxiety level. The analysis of posttreatment scores after group A had also received treatment (*i.e.*, test point III for group A and test point II for group B) indicated a significant difference in anxiety level once again, t (30) = 2.23, $p < .04$.

Conclusions. It can be concluded from the above analysis that persons acquiring a functional knowledge of SUDS experience a decrease in anxiety level. This decrease in anxiety level was demonstrated by pretreatment-posttreatment comparisons and treatment-control group comparisons.

Hypothesis #3

That the anxiety reduction will be retained over time, as evidenced by scores on a two week posttreatment follow up assessment of anxiety level.

Findings. Evidence that the decrease in anxiety level experienced by members of group B was maintained over time was obtained by comparing IPAT scores from test points II and III. This indicated a further significant reduction in anxiety level, t (15) = 2.58, $p < .03$. A comparison of group A and group B IPAT scores obtained at test point III offered further evidence of this reduction. The significant difference in anxiety level between the two groups which had once again existed after group A received treatment, was no longer evident.

Conclusion. Hypothesis # 3 is also supported.

Summary of Results

The above arguments attest to the therapeutic value of a functional knowledge of SUDS. The results of this study suggest that people can

learn to cognitively monitor their anxiety level on Wolpe's (1969) *Subjective Anxiety Scale*, and that doing so will result in a decrement in anxiety level. This was demonstrated by pretreatment-posttreatment comparisons of anxiety level as well as treatment-control comparisons.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

In this chapter, some possible applications of the study are discussed. Additionally, suggestions for future exploration are offered, as are possible alternative explanations for the positive results. The reader is cautioned that much of the discussion, especially in the last section, is speculative in nature, and although it is often interesting and enjoyable to speculate concerning the theoretical rationale underlying deduced conclusions, one must take care not to mentally bridge the gap between logical speculation and fact.

Applicative Implications

Following the facilitative suggestions of Wolpe (1969) concerning the *Subjective Anxiety Scale*, Sherman and Cormier (1972) suggest establishing subjective scales for measuring a wide variety of interpersonal reactions. However, in both cases the subjective units are used only to facilitate other treatment methods. Now that the therapeutic value of SUDS has been demonstrated, it would seem viable to use this notion as a treatment method in its own right. Since people who learned to cognitively monitor their anxiety level (by attaching the appropriate SUD number to the situations in which they find themselves) experienced a decrease in anxiety, it would seem that a new, efficient, relatively straight forward method for treating anxiety has developed. Because the program is designed to operate in a group setting, its use could result in a reduction in counselor case load and

a potential increase in the number of ple receiving treatment. The method might also be adapted to a computer assisted instruction format or video taped and made available to clients on a treat yourself basis. Naturally, replication and more extensive research are necessary. However, keeping in mind the didactic nature of the treatment program, the results of the initial investigation suggest the feasibility of designing instructional packages (*e.g.*, group presented, computer assisted, video taped, or those based on other innovative procedures) which teach the notion of SUDS as a viable means for anxiety reduction.

Areas for Future Exploration

Expectancy of therapeutic benefit has been demonstrated to create a powerful influence in therapeutic treatment (Katkin & Deitz, 1973; Wilkins, 1971). Although more will be said later in this chapter concerning the author's efforts to reduce the expectancy effect, future research attempts in this area might include stronger controls of the expectancy variable.

In any design utilizing multiple measure, the extent to which test scores are affected by practice becomes a difficult question to answer. Future researchers might wish to incorporate an independent control group to determine the regression effect caused by multiple test administration and apply that result to the test scores of the treatment sample in an endeavor to achieve a more unbiased result.

Although objective data were obtained to support hypotheses two and three, only subjective support is given for hypothesis one. Further research incorporating objective physiological measures might more accurately assess the degree to which subjects accurately monitor

their emotional level.

Future exploration in this field might include a nonstudent sample or a younger (*e.g.*, high school age) student sample; incorporate larger treatment groups, a treatment group receiving computer assisted instruction, or a self-instructed (*e.g.*, via video tape) treatment group.

Explanatory Summary

After a study is completed and the data analyzed, some students find it enjoyable to speculate as to alternative explanations for the results. While it is entirely possible to attribute the positive results of this study to the rationale outlined in Chapter 2 and Appendix C, other explanations may also be viable.

In discussing the necessity of different aspects of the desensitization process, Wilkins (1971) concluded that the only necessary condition appeared to be the imagination of fear-relevant scenes. From this perspective one could credit the imagined situations, which were part of the initial construction of subjective anxiety scales in session #1 and the contrived monitoring situations in session #2, as contributing to the anxiety decrease experienced by the treatment subjects.

As was mentioned earlier, expectancy of therapeutic gain is an important variable in the therapeutic process, and some may wish to attribute the positive results of the present study to expectancy of improvement. In discussing the contribution of expectancy to therapeutic results, it is necessary to maintain a delicate balance. If the client is convinced that a particular treatment method will not work, the probability of therapeutic gain is very small -- if charlatan

tactics are used to sell a placebo methodology, then expectancy must be given a majority of the credit. In the present study, great care was taken to emphasize the experimental nature of the investigation and the "no guarantee of success" nature of the treatment program. The attempt was made to incorporate only the minimal amount of expectancy necessary to ensure practice of the concept by the subjects. Therefore the author feels justified in claiming that expectancy of therapeutic benefit on the part of the subjects was not a major contaminant.

Lundin (1969) states that once anxiety has been conditioned it functions to increase and spread its effect. As this generalization proceeds the person becomes unable to identify the stimuli initiating the anxious response and is therefore helpless to control his anxiety. From this perspective one could argue that the continuous cognitive monitoring of anxiety level would assist the individual in identifying those situations in which anxiety may be elicited. This identification may be the first step in a treatment process.

Anxiety often operates on a self-amplification (positive feedback) model. That is, as a person perceives himself becoming anxious, the very perception of the rising anxiety increases his general anxiety level. The new higher level of anxiety causes him to be more anxious, and so on (*i.e.*, within limits, the state magnifies). Ellis (1974) postulates that therapy is effective when it helps clients to change their self-defeating cognitions. The cognitive monitoring of anxiety level could facilitate this end by enabling persons to discover the extent to which they could control their anxiety *i.e.*, recognize those situations in which they experience mild anxiety but still function satisfactorily (*e.g.*, Instead of saying "Hey I'm getting anxious,

before long I'll be going all to pieces", a person could say "Hey I'm getting anxious, I'm up to 20 SUDS, but that's no problem, I can still control that.") This would help to take mild anxiety states out of the self-amplification (self-defeating) framework and give the individual a sense of control over his anxiety.

The position of Lazarus and Averill (1972) is that the degree of anxiety is based on the individual's appraisal of threat in a given situation. Both Wilkins (1971) and Schacter (1966) claim that emotional experience results from the cognitive labeling of arousal, not from the physiological arousal level. It will be recalled from the discussion presented in Chapter 2 that anxious individuals tend to perceive an exaggerated degree of threat in situations which evoke anxiety. The process of monitoring ones anxiety level could result in a more accurate assessment of the degree of threat that different situations elicit. This would reduce the intensity of the cognitive label, which would in turn, reduce the emotional experience.

Regardless of the direction that our speculations lead us, one fact remains: persons acquiring a functional knowledge of SUDS have experienced a decrease in their anxiety level. Moreover, if replication supports the thesis of this paper, then a program for the treatment of anxiety that is simple to understand, quickly and easily taught and adaptable to individual or group settings, will have been discovered.

REFERENCES

Alexander, A.A. Psychophysiological concepts of psychopathology. In N.S. Greenfield & R.A. Sternbach (Eds.), *Handbook of Psychophysiology*. New York: Holt, Rinehart & Winston, 1972.

Behnke, R.R. & Carlile, L.W. Heartrate as an index of speech anxiety. *Speech Monograph*, 1971, 38, 65-69.

Bowersock, R.B. Contingency self-management in counseling. *Journal of Counseling Psychology*, 1974, 21, 265-268.

Cattell, R.B. *Personality and motivation: Structure and measurement*. Yonkers-on-Hudson: World Book, 1957.

Cattell, R.B. & Scheier, I.H. *Handbook for the IPAT anxiety scale questionaire (self-analysis form)*. Champaign, Ill.: IPAT, 1963.

Cohen, J. The IPAT anxiety scale. In O. Buros (Ed.), *The sixth mental measurements yearbook*. Highland Park: Gryphon Press, 1965.

Dustin, D.S. *How psychologists do research: The example of anxiety*. Englewood Cliffs: Prentice-Hall, 1969.

Ellis, A. Cognitive aspects of abreactive therapy. *Voices: The Art and Science of Psychotherapy*, 1974, 10, 48-56.

Emery, J.R. Systematic desensitization: Reducing test anxiety. In J.D. Krumboltz & C.E. Thoresen (Eds.), *Behavioral counseling: Cases and techniques*. New York: Holt, Rinehart & Winston, 1969.

Emery, J.R. & Krumboltz, J.D. Standard vs. individual hierarchies in desensitization to reduce test anxiety. *Journal of Counseling Psychology*, 1967, 14, 204-209.

Epstein, S. The nature of anxiety with emphasis upon its relationship to expectancy. In C.D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (Vol. II). New York: Academic, 1972.

Eysenck, H.J. Classification and the problem of diagnosis. In H.J. Eysenck (Ed.), *Handbook of abnormal psychology*. New York: Basic Books, 1961.

Eysenck, H.J. *The biological basis of personality*. Springfield: Charles C. Thompson, 1967.

Eysenck, H.J. Psychological aspects of anxiety. In M.H. Lader (Ed.), *Studies in anxiety*. Ashford, Kent: Headly Bros., 1969.

Galassi, J.P., Galassi, M.D. & Litz, M.C. Assertive training in groups using video feedback. *Journal of Counseling Psychology*, 1974, 21(5), 390-394.

Glaser, R. Psychology and instructional technology. In R. Glaser (Ed.), *Training research and education*. Pittsburgh: University of Pittsburgh Press, 1962.

Gray, J.A. *The psychology of fear and stress*. New York: McGraw Hill, 1971.

Grinker, R.R. The psychosomatic aspects of anxiety. In C.D. Spielberger (Ed.), *Anxiety and behavior*. New York: Academic, 1966.

Guilford, J.P. The IPAT anxiety scale. In O. Buros (Ed.), *The fifth mental measurements yearbook*. Highland Park: Gryphon Press, 1959.

Hamilton, M. Diagnosis and rating of anxiety. In M.H. Lader (Ed.), *Studies in anxiety*. Ashford, Kent: Headly Bros., 1969.

Izzard, C.E. Anxiety: A variable combination of interacting fundamental emotions. In C.D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* Vol. II. New York: Academic, 1972.

Katkin, E.W. & Deitz, S.R. Systematic desensitization. In W.F. Prokasy & D.C. Raskin (Eds.), *Electrodermal activity in psychological research*. New York: Academic, 1973.

Lang, P.J. The mechanics of desensitization and the laboratory study of human fear. In C.M. Franks (Ed.), *Behavior therapy: Appraisal and status*. New York: McGraw Hill, 1969.

Lazarus, R.S. & Averill, J.R. Emotion and cognition: With special reference to anxiety. In C.D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* Vol. II. New York: Academic, 1972.

Leavitt, E.E. *The psychology of anxiety*. Indianapolis: Bobb-Merrill, 1967.

Leder, S. The psychotherapy of anxiety. In M.H. Lader (Ed.), *Studies in anxiety*. Ashford, Kent: Headly Bros., 1969.

Logan, F.A. *Learning and motivation*. Dubuque: Wm. C. Brown, 1969.

Lundin, R.W. *Personality: A behavioral analysis*. London: MacMillan, 1969.

Malmo, R.B. Overview. In N.S. Greenfield & R.A. Sternbach (Eds.), *Handbook of psychophysiology*. New York: Holt, Rinehart & Winston, 1972.

Marquis, J.N., Morgan, W.B. & Piaget, G.W. *A guidebook for systematic desensitization*. Palo Alto: Veterans Workshop, 1971.

O'Neil, D.G. & Howell, R.J. Three modes of hierarchy presentation in systematic desensitization therapy. *Behavior Research and Therapy*, 1969, 7, 289-294.

Paul, G.L. & Shannon, P.T. Treatment of anxiety through systematic desensitization in therapy groups. *Journal of Abnormal Psychology*, 1966, 71, 124-135.

Rachman, S. Studies in desensitization. I. The separate effects of relaxation and desensitization. *Behavior Research and Therapy*, 1965, 3, 245-251.

Schacter, S. The interaction of cognitive and physiological determinants of emotional state. In C.D. Spielberger (Ed.), *Anxiety and behavior*. New York: Academic, 1966.

Scheier, I.H. *Recent data on IPAT anxiety tests: Information bulletin #13*. Champaign: IPAT, 1967.

Sherman, T.M. & Cormier, W.H. The use of subjective scales for measuring interpersonal reactions. *Journal of Behavior Therapy and Experimental Psychiatry*, 1972, 3, 279-280.

Spielberger, C.D. Theory and research on anxiety. In C.D. Spielberger (Ed.), *Anxiety and behavior*. New York: Academic, 1966.

Spielberger, C.D. Towards a state-trait theory of anxiety. In C.D. Spielberger (Ed.), *Anxiety: Current trends in theory and research*. New York: Academic, 1972.

Smithies, J.R. The neurophysiology of anxiety. In M.H. Lader (Ed.), *Studies in anxiety*. Ashford, Kent: Headly Bros., 1969.

Valins, S. Cognitive effects of false heart-rate feedback. *Journal of Personality and Social Psychology*, 1966, 4(4), 400-408.

Valins, S. The perception and laveling of bodily changes as determinants of emotional behavior. In P. Balck (Ed.), *Physiological corelates of emotion*. New York: Academic, 1970.

Wilkins, W. Desensitization: Social and cognitive factors underlying the effectiveness of Wolpe's procedure. *Psychological Bulletin*, 1971, 76, 311-317.

Wolpe, J. *Psychotherapy by reciprocal inhibition*. Stanford: Stanford University Press, 1958.

Wolpe, J. *The practice of behavior therapy*. New York: Pergamon, 1969.

APPENDICES

APPENDIX A

Institute for Advanced Study in Rational Psychotherapy
45 East 65th Street, New York, N.Y. 10021 / (212) LEhigh 5-0822

5 June 1975

Bryan A. Hiebert
Dept. of Educational Psychology
University of Alberta
Edmonton, Canada T6G 2G5

Dear Mr. Hiebert:

In response to your letter of May 26th, let me say that I know of no research that closely resembles that which you are doing. There are a great many allegations, particularly in the experiential and gestalt therapy literature which would state or imply that if individuals become more aware of their arousal sequence, they will then be able to do something about their disturbed feelings and behavioral state. These statements and implication, however, imply that it is the awareness and experience itself of their emotional states that help them. I have a recent article which points out that it is doubtful whether it is this awareness or abreaction of feeling alone that does so but there are cognitive processes going on. I am enclosing a copy of this article from Voices herewith.

Anyway I think there is probably a little literature on the specific kinds of things that you would like to investigate but very little. I think your research therefore would be of distinct importance. As you point out your efforts will really be launching some kind of an attack on clients inadequate belief system or at least making them aware that they have such beliefs and then they may attack them on their own. Whenever awareness about just about anything occurs human beings, as I say in my article, tell themselves something about their feelings and cognitions and behaviors of which they are aware. If you want to do so, you can investigate exactly what they tell themselves about their awarenesses but this is not necessary for the purposes of your thesis. Anyway, I wish you luck in your research. I am sorry that I do not have more specific previous studies to which to refer you.

Sincerely yours,

Albert Ellis

Albert Ellis, Ph.D., Exec. Director

AE:mr

TEMPLE UNIVERSITY
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June 3, 1975

Mr. Bryan A. Hiebert
The University of Alberta
Faculty of Education
Department of Educational Psychology
Edmonton, Canada T6G 2G5

Dear Mr. Hiebert:

Thank you for your letter. The question of the possible therapeutic value of knowing and handling the SUD scale is an interesting one; but my clinical impression is that it does not have therapeutic effects under ordinary circumstances. It might conceivably have such effects if constant focusing upon it were to evoke counter-anxiety responses that would tend to inhibit the anxiety responses to specific items. Such therapeutic effects would parallel those that take place when the person is exposed to anxiety-evoking stimuli in his life situation in the context of counter-anxiety responses that other stimuli simultaneously elicit. It would also parallel the effects of the use of sentences of a contrary-to-anxiety kind, as demonstrated in Meichenbaum's experiments. (Meichenbaum, of course, mistakenly attributed the effect to change of cognition; but this is untenable since in many of these subjects, the conception of the situation has already changed before anxiety decrement occurs.)

I can refer you to no materials, since, as far as I know, nobody has studied the problem you refer to. There have been factorial studies of the SUD scale, but these are obviously a different matter.

With best wishes,

Yours sincerely,

Joseph Wolpe, M.D.
Professor of Psychiatry and
Director, Behavior Therapy Unit

JW:bjs

APPENDIX B

I'd like to thank _____ for giving me a few minutes of class time today. I'm currently involved with research in anxiety. As you are perhaps aware, anxiety has historically been treated by having one person, who is labeled as "sick", talk out his troubles to a therapist, who supposedly was "not sick". The thinking was, "If a person can identify the things in the past that are making him anxious, then the anxiety will go away." People receiving this kind of treatment often didn't perceive any change in their level of anxiety, and this approach became the butt of many jokes and cartoons. Quite understandably, people began adopting a pretty defeatist attitude towards anxiety, believing that it was just one of those things one had to learn to put up with as best one could.

Recently, interest in treating anxiety has greatly increased. Many new methods have been developed that are easily learned, and have been very successful in producing long lasting relief from anxiety. The program I'm working on has just been developed. It has a solid theoretical base, centering around the process by which an organism becomes worked up, and subsequently experiences anxiety, and now we're studying the degree to which the theory is born out in practice.

For the purposes of the study, we will be using two groups of people who will receive the program approximately two weeks apart. The program will consist of three or four sessions scheduled within a two week interval.

The question that's probably in everyone's mind is "What's in it for me?" Well, you can expect to get to know more about yourself, the kinds of things that make you anxious, and just how anxious you become. You will discover quite a bit about the nature of anxiety, and if the

body of theory predicts correctly, you will experience a reduction in your general level of anxiety. Not only should your general level be lowered, but you will learn how to control your anxiety better, how to deal more effectively with it, and how to increase the changes of acting in a productive way when you're faced with an anxiety inducing situation.

I've prepared a sheet of paper in which the proposed meeting times are listed. If you're interested in taking part, please sign your name and telephone number, and check any of the times that would be convenient. If one time is preferable, you could indicate that with a 1st. When I've seen all the classes, I'll be phoning you to tell you when the first session will be.

APPENDIX C

Session #1

I'm going to begin today by talking a bit about anxiety, and how people become anxious. Then I'll end up by introducing a way of combating anxiety. I'd like to keep all our sessions informal. If you have any questions, I'd prefer that you ask them as they arise - please don't feel that you have to wait until the end, just interject your questions as we go along. It's quite important that the things we're talking about make sense to you. The ideas aren't difficult, and I'm pretty sure they make sense to me, and I firmly believe that I should then be able to phrase the concepts in such a way that they will also be clear to you.

This cartoon sort of summarizes many of the past approaches to dealing with anxiety. At one time, people believed that anxiety was essentially inherited - something like big feet, or a long nose. If your parents were up-tight individuals, chances were, you would be, also. Talk about curing anxiety was just about non-existent. If you were unfortunate enough to be an anxious person, that was something you just had to put up with as best you could.

Later on, psychologists began to take a more rigorous look at the nature of anxiety. They discovered that it was quite easy to teach a rat to run down a T maze to obtain food either at A or B. Then they began introducing anxiety into the situation. An electric grid was placed across the path here and there. Regardless of which way the rat turned, he received a shock. Now suppose the shock in getting to A was stronger than the shock in getting to B. The popular view of the day was that the rat would experience more anxiety in going towards A because that situation was more unpleasant.

Well, about twenty years ago Joseph W[illegible] appeared on the scene, and introduced a new outlook on anxiety. He said the problem with this way of thinking is that it places anxiety out here, in the environment, when in reality, it's in here, inside the organism. Moreover, Wolpe said that it was right here at the junction point where the rat experiences anxiety, and his anxiety is the result of having to choose between these two unpleasant situations. If the two shocks are quite different in strength, then only a small amount of anxiety will be present - the choice is quite easily made. However, if the two shocks are more equal in strength, it becomes more difficult to decide which path to take, and the rat experiences more anxiety.

Wolpe illustrates it this way. Suppose a girl comes home and announces her engagement. Her parents and friends have met the young man and they are really approving - they tell her how lucky she is to be marrying such a fine young man. The office staff take up a collection and buy her a present. Her friends put on a shower for her. The invitations are set out. Now, suppose as she sees more and more of her fiance, and a few hassles about the wedding plans develop, she becomes more aware of his faults and begins to question her decision to marry him. In fact, she becomes quite certain that he's really not the man for her. Now, she's experiencing a fair degree of anxiety. She really feels quite stymied. And her final decision won't necessarily be the one which involves the least amount of short term unpleasantness. Well, this is one type of anxiety: It's the emotion that a person experiences when making difficult decisions.

A second type of anxiety comes from being exposed to unpleasant situations. Suppose I invite my boss home for supper. Naturally,

I'm a little nervous. If all goes well, it might help me get a promotion, if the evening is a flop, well, that won't do me any good for sure. I want to create a good impression with my boss and I plan over in my mind how I'll impress him with my wine cellar, my oil paintings, antique collection. I want him to approve of my wife's cooking and think of her as an intelligent person and a good conversationalist - everything has to be perfect. Now, suppose I perceive the evening as really going well: the boss is duly impressed with the furnishings, the choice of dinner wine, my wife's cooking and charm. Then my anxiety level will start to decline, and I will feel more comfortable and more relaxed. However, if I perceive the boss as reacting sort of ho-hum to the antiques and paintings, you know, he left all that old garbage back on the homestead, and as we walk into another room, oh, I suppose some people really like those kinds of pictures, and oh, wine for supper, I really like Baby Duck, and there on the table sits my prize bottle of Nuits-St.-George, 1954, I see the boss forcing himself to eat a modest portion of supper, looking bored with the conversation, and around 8:30 he leaves with the excuse that he has to go home and exercise his dog. Well, my anxiety hasn't diminished at all, and I probably won't sleep too well that night. After two or three days the anxiety level would begin to subside, however, afterwards various things that are similar to that evening would still make me feel anxious. For example, seeing my boss at work the next day might make me anxious; the next time we have someone else over for supper I might be a little more nervous (anxious) than usual. The amount of anxiety I experience would depend on how similar these later situations were to the original .... so, this second kind of anxiety comes from being involved in unpleasant

situations. Basically then, anxiety stems from two sources: being forced into making difficult decisions, or being in unpleasant situations.

Now, this is not to imply that everything that people commonly label as anxiety is unhealthy, and should be driven away for ever and all time. Suppose we're hiking in the sand hills of Southern Alberta and we come across a rattle snake. Most people would view that as a high anxiety situation, and the anxiety we experience here is healthy - it helps us react quickly and avoid danger. However, it is not healthy to be anxious about hiking in the sand hills just because we experienced danger there at one time in the past. Today many psychologists separate these two types of situations. The emotion experienced in the first type of situation, where we were in real danger, might be more appropriately called fear, and it usually leads to productive behavior. The term anxiety can then be reserved for the latter situations in which no real danger exists, and in which our behavior is not adaptive.

And so we draw this distinction between fear and anxiety. Fear is the emotion occurring spontaneously when a person is in real danger. Anxiety, however, is essentially learned. It occurs in a situation where no real danger exists, and it often results in behavior that is not really in our best interests.

For a long time people were uncertain about the way in which anxiety is acquired, however, now it is possible to look at the way in which the nervous system functions for an explanation. You see, today we know a lot more about how the brain and the rest of the nervous system functions than we did a few years ago. We've mapped portions of the brain, and we've got a pretty good idea of the neurological process

involved when a person becomes excited, or aroused. Here, I'll show you what I mean. Man's brain can be roughly divided into three areas: one which controls motor activity - initiating and co-ordinating movement, another area controls the senses - smell, sight, etc., and the centers for motivation lie in this third area. This slide gives you a rear view. Notice the motor, sensory and motivation areas, and this other portion, here, that governs how susceptible we are to stimulation and co-ordinates activity with the autonomic nervous system. Physiologists have now located the areas of the brain which appear to control movement, writing, speech, vision, etc. In order to control certain psychotic disorders, a process called split-brain surgery has been discovered. An incision is made between the two hemispheres of the brain, along here. Follow-up work with these patients has revealed that what is seen with the left eye is registered on the right side of the brain, the speech center is on the left side of the brain, etc. This isn't meant to imply that we know all about cortical processes, only that recent developments have greatly expanded our knowledge about how the brain functions and how it processes information, and this has increased our understanding of how people become excited and how anxiety develops.

This is a flow chart of the nervous system. As you see, it is divided into two main systems: the central nervous system, and the peripheral nervous system. The brain and the spinal chord make up the CNS and the PNS controls the function of the vital organs (via the autonomic nervous system) and sensory reception and muscle movement (via the somatic nervous system).

This is pretty complex, but fortunately in order to understand

behavior, the essential aspects can be represented like this. The brain and the spinal chord are located here, and the PNS branches out into the various parts of the body. O.K.? Suppose a dog bites a boy on the hand. This sets up a lot of neural activity. A pain message is sent back to the muscles controlling the hand, telling them to pull away from the pain. All of this happens in a fraction of a second. That seems innocent enough, however, the pain is not the only thing that's happening. There's the sight of the dog, the surrounding scenery, the smells in the air at the time, the pain, the fear, and the fast breathing, heart beat, etc. Each of these things initiate neural activity which is sent to the appropriate part of the brain for processing. Because all of this happens at essentially the same time, the different messages tend to become associated with one another. Later on, any part of the situation becomes capable, to a greater or lesser degree, of triggering off the emotional experience that was initially produced. For example, the mere sight of that breed of dog, or perhaps any dog, might later result in anxiety. Perhaps the biting took place in a certain park. On subsequent trips to that park the boy may again feel anxious. In an extreme case, it might result in a phobia about dogs, or parks, or certain kinds of trees or any number of things. The parts that made the strongest impression are capable of triggering off the most intense neural activity, and consequently producing the greatest amount of anxiety.

Now, when a person becomes excited, something has to be done to reduce the resulting neural activity. In the truly dangerous situation, our reaction (say, running away) was adaptive and therefore reduced the excitation. Later on, when we feel anxious, but no real danger exists,

something still has to be done to reduce the neural activity accompanying the anxiety. Usually people respond by trying to ignore it, in the hope that it will go away. However, this doesn't work too well. What we're going to be doing in a few minutes, is looking at a way of doing this.

When people become anxious, or aroused, there is a certain sequence that our body follows as it gets worked up. The sequence begins, at the non-arousal end, with curiosity, then continues through attention and fear as we become more aroused, and finally results in panic at the intense end of the continuum. It seems that anxious people tend to operate at either end of the scale, and are usually not aware of the middle steps. Either a situation doesn't result in any anxiety, or it results in great anxiety. In reality, the body is going through this whole sequence, however, the middle portions pass largely unnoticed. So we find ourselves walking in the park - we see a dog - all of a sudden we feel really up-tight and do something like, oh, shoo-shoo the dog and he bites us again. The point being that when we experience intense emotion, when we panic, we don't really think too clearly, and the resulting behavior is often not really in our best interests. That's why people behave in unproductive ways when they're up-tight.

Well, we can teach people to be more aware of how aroused they are, and label their level of excitement. This accomplishes two things. By identifying and labeling the degree of arousal, the neural activity associated with it tends to subside. And secondly, by being more aware of how excited we are, especially being able to pick out these early stages, we can decide what to do in a given situation before the

emotion begins to interfere too drastically with our cognitive functioning. The idea is really quite simple, and when one considers the physiological evidence that we've just discussed, it makes a lot of sense too.

Well enough theory. Let's see how it works. I'd like you to take a sheet of paper. At the top of the page, write down the event that makes you the most up-tight. It's the situation in which you experience the most anxiety, or the thing that presents the most hassle for you... ...O.K.! You've written that down, now label it 100. At the bottom of the page, write down the event or situation in which you are really relaxed, ...you don't feel at all hassled, ...just sort of warm and secure and relaxed.....label that 0. What you're doing now is constructing a subjective anxiety scale. The numbers represent Subjective Units of Disturbance - SUDS. The most distressing event elicits 100 SUDS, and you experience 0 SUDS in the least disturbing situation. Now, let's try to put in some of the in-between numbers. For example, where would you put yourself now? How many SUDS are you presently experiencing? That's right, estimate your present level and label it "now". O.K. Let's stop and reflect about what happened today. How many of you were in class today? Good! Think back, how many many SUDS were you experiencing during class? Try to identify the level and label it..... Now you came into this room tonight, into a strange situation, perhaps you were a little uncertain, or apprehensive. What was your SUDS level then?... If you want to revise some of your earlier numbers, it's permitted. You haven't tried to do this before, and it's only natural that you may want to change your mind. As you practice more, you'll become better able to judge your level. O.K.

Let's take some more situations. You're sitting down to supper, where does it fit? ... Imagine this. Tomorrow afternoon you see one of the other members of this group in the coffee shop, sitting by themselves. You decide to walk over, introduce yourself and join them for coffee. That one might rate a little higher..... Or, you're just getting ready for bed. You've worked hard today, accomplished a lot, you got an assignment back and you really did well on it. Where would that fit?

What you're doing right now is paying attention to yourself. Some people call it "getting in touch with your feelings." It will have the effect of making you more aware of the things that make you anxious, and also the degree of anxiety you experience. You may say, "Well I know that already", but chances are, when you start monitoring your anxiety level during the day you'll find out that your present impression is not too accurate. The research that I referred to earlier would indicate that the process of identifying your anxiety level, and labeling it is sufficient to reduce your anxiety level. It's strange you know. I've been doing research in anxiety for a while now, and about two months ago I was setting up this program, deadlines were starting to come due, I was getting quite up-tight, edgy at home with my wife and little boy, and all of a sudden it hit me. Here you are, doing research in anxiety, setting up a program that centers around monitoring your anxiety level, and look at you, you're higher than a kite. And there I was, up around 75 SUDS. Well within about ten minutes of that realization, my anxiety level had dropped to around ten SUDS. If I hadn't been aware of my condition, I would have continued being highly anxious, and who knows what might have happened. However, insight into my emotional level resulted in a marked anxiety decrease. Since then,

I've been closely monitoring my own anxiety level. Now it has almost become an automatic process, and my anxiety level is remaining consistently quite low.

Now the more capable you become of accurately monitoring your own arousal level, the more results you can expect from this program. And as with most things, the way to become proficient is to practice. So I'm going to ask you to practice monitoring your anxiety level over the next two days. I've got some little books here, one for each of you, and I'd like you to carry this book with you and every ½ hour, or 1 hour even, just jot down your SUDS level then when you have a minute, identify the events you've labeled. So that's stop and write down the number - then when you have time, fill in what you were doing at the various monitoring points. If you pay attention to things like heart rate, how fast you're breathing (if I'm sitting here, and I think I'm relaxed, but my chest is going a mile a minute, then I'm probably not as relaxed as I thought), or some people have nervous ticks (and there again, if my knee is bouncing up and down, or my teeth are tightly clenched, or whatever, then I'm probably not really relaxed), or perspiration - things like that, it will help you identify your arousal level.

The result may look something like this:

30 - stub toe getting out of bed

15 - having breakfast

15 - lecture starts

10 - lecture over

0 - sitting outside having lunch

25 - ambulance goes by

50 - asked to answer question in class

10 - reading in the library

25 - eating supper

70 - watching KOHLCHAK on TV

20 - reading

5 - ready for bed

Suppose you misjudge the first reading. Since it tends to become more or less a reference point for the ones that follow, this presents a bit of a difficulty. It's the monitoring that is important, and although there is a tendency to say "compared to what went on before, this is where I am now", you should try to avoid that - look at each situation by itself and judge your level. Perhaps when you look back over the day's events some of them will seem less severe - however, the way you rated them at the time was probably really the way you felt then, and the realization afterwards, you know, "how silly I was to get that worked up over that", will be beneficial. The important thing is that you practice the monitoring. So take this booklet, with you, use it during the day, ... and we'll see you two evenings from now.

Session #2

(Begin with an informal intra-group discussion about how the monitoring is progressing.)

It sounds like you're really making progress. The SUDS idea is catching on and you're becoming better at labeling your emotional level. Probably, you're finding out a lot about yourself too - some of the things that make you nervous, and how nervous they really make you. Likely, some of the things don't make you as up-tight as you thought, and you've probably discovered some areas where you didn't think you were up-tight, but there was just a hint of anxiety there. It's surprising that you learn about yourself when you start paying attention to things like heart rate, breathing, perspiration, and emotional level. But as you pay attention to yourself, and continue monitoring your anxiety level, you start to experience the benefits as well. Not only do you get to know yourself better, but you become better able to act productively in an anxiety inducing situation, because you catch yourself before the anxiety becomes too extreme. And also, as you probably remember labeling the neural activity associated with the anxiety, *i.e.*, the anxiety level, helps to reduce the anxiety.

Remember last day, we mentioned how Joseph Wolpe introduced the notion that anxiety was essentially learned. How when we encounter a situation that is truly dangerous and we experience fear, later on, different aspects of that situation become capable of producing a similar emotion that we called anxiety. Anxiety is different from fear in that the situation isn't truly dangerous, and the resulting behavior is usually not productive. The anxiety developed because

different aspects of the original event became associated with the emotion that resulted, and later on, any part of the original situation became capable of triggering off the feeling of anxiety.

We also described two kinds of anxiety - remember what they were? Anxiety coming from being forced to make difficult decisions, and anxiety that comes from being in extremely unpleasant or traumatic situations. Also, we went into a brief neurological discussion to illustrate how this happens.

Some of the things we talked about in the last session might be valuable for your future reference. Also, I'd like to ensure that the concepts are really clear in your mind, and it has occurred to me that we could accomplish both of these things by having you work through a programmed sequence that covered the essentials from last day's class. So I'll pass this out now, and I'd like you to work through it. I'll just sort of wander around and if there are any points that you'd like clarified, we can discuss them together.....

That provides a good sumary of our last session. Remember I said that the SUDS concept is one way of dealing with the neural excitation that accompanies anxiety. As you become increasingly more aware of those in-between stages on the arousal continuum, you should become more aware that you're not always as anxious as you may have previously thought. You may also find that situations where you were experiencing 30 - 40 SUDS yesterday, might only be rating 20 - 25 SUDS today. That's the reward you get for paying attention to yourself and taking the time to monitor your emotional level. Now the more you practice, the better you get at it, and before long you'll find that the process has become automatic.

Today I've prepared a few situations that I'd like you to experience and monitor your arousal level. First I have a few slides. I'd like you to imagine yourself in these situations and monitor your SUDS level. ....

I prepared these situations to give you a little more variety than you might normally experience. Now I've got one final situation for you this evening. We're going to have a little test to close this session. I've prepared a few questions that will help me to formally assess how clearly you understand the concepts we've been discussing. When you get your paper, please fill in your name, and indicate your present SUDS level. Remember this isn't a horrendous exam or anything like that - it's really for my benefit, so that I can do any touching up that needs to be done next day. ....

Thanks. The next session will be our last one for about two weeks. We'll meet next day, and then two weeks later there will be one more session lasting about twenty minutes. I'd like you to keep monitoring your SUDS level between now and then. I'd like you to try to be aware of your SUDS level as often as possible. Even if you only record it once every hour, try to monitor your level all the time. Remember, the more you practice the monitoring, the better you will become at it, and the more benefit you can expect.

Session #3

(Begin with an informal discussion about how the monitoring is progressing, and any perceived change in anxiety level.)

The results from the test last session would indicate that you all have a pretty good understanding of the concepts involved. You're really to be commended for the quickness and apparent ease with which you've acquired the notion of monitoring your anxiety level. It indicates to me that you've really been practicing your monitoring.

I was wondering if there are any further questions about what we've been doing over the past week, or about this study in general?....

Well, your involvement in this program is just about finished. In a few minutes, I'll be giving you a questionnaire to fill out. It's the same one which you filled out before. I'm not really interested in seeing whether you can remember how you answered last time. In fact, it would be better if you had no recollection of that. I'm interested in how you feel now ... your present reaction to the items on the questionnaire.

In two weeks, there will be one final session to discuss your continued progress, and any problems encountered, and to give you one final questionnaire to fill out. Any questions? ...

Good. I'll pass out this questionnaire now. Please fill in your name at the top. Remember, it's your present reaction that I'm interested in. Try not to reflect on your previous response, just indicate how you presently feel.

Now that you've finished, on the front of the form, beside your name, I'd like you to indicate (yes or no) whether you feel that this program has helped you control your anxiety. If it has, I'd like you

to give me an estimate of how many SUDS your present anxiety level has changed between now and when the program started - *i.e.* - 20 SUDS, or perhaps even +50 SUDS .... I don't know, but hopefully not the latter. If you feel you've experienced a change in your anxiety level, just an indication of how much.

Thank you. See you in two weeks.

APPENDIX D

A Contemporary Look at Anxiety

At one time, people thought that anxiety was 1._____ Joseph Wolpe introduced the idea that anxiety is 2._____ According to this position, anxiety comes from basically two types of situations: 3._____ or 4._____ Sometimes, anxiety is confused with a similar emotion, namely 5._____. The main difference between these two emotions is that 6._____ occurs in a truly 7._____ situation, while anxiety occurs in a situation which is 8._____

When people perceive something, 9._____ messages are sent to the 10._____ where they are processed, and a response is formulated. Every situation is composed of many different parts, each part sending its own neurological message to the brain. Because these messages are being processed at the same time, they tend to become associated with the emotional experience that the situation produces. Later on, any part of the original event becomes capable of producing the 11._____ that was originally experienced. If a person experiences fear in a dangerous situation, afterwards, something associated with the original event may produce a similar emotion, namely 12._____ The neural activity produced in the dangerous situation is reduced by the productive behavior which follows it. Anxiety, however, usually results in unproductive behavior, which does not reduce the neural excitation. One way of reducing this neural activity is to 13._____ our anxiety level.

People are often not aware of how anxious they are becoming

until they are very anxious. By closely 14. _____ our anxiety level, it is possible to reduce the detrimental effects of anxiety. Monitoring ones anxiety level helps combat anxiety in two ways: firstly, 15. _____ and secondly, 16. _____. Some of the physiological earmarks that tell us we are beooming anxious are 17. _____ and _____.

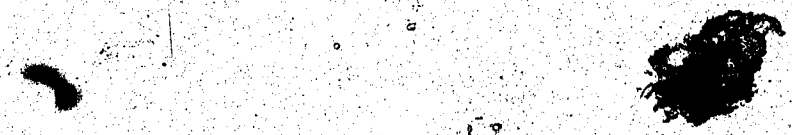
One effective method for monitoring anxiety level is to use the 18. _____ scale. The letters stand for 19. _____. This method works by labelling the 20. _____ as 100, and labelling the 21. _____ as zero. The anxiety experienced in other situations can be represented by 22. _____. When a person monitors their anxiety level on the SUDS scale, they are really 23. _____ their emotional level. This 24. _____ the neural activity associated with anxiety, and also increases the awareness of the 25. _____ on the arousal sequence. By being more aware of these early stages, it is possible to react to a situation before one's emotional level 26. _____.

Suggested Responses

1. Inherited
2. Learned
3. Making difficult decisions
4. Unpleasant situations
5. Fear
6. Fear
7. Dangerous
8. Not really dangerous
9. Neurological
10. Brain
11. Emotion
12. Anxiety
13. Label or monitor
14. Monitoring
15. It reduces the neural activity associated with anxiety
16. Makes one more aware of the early stages on the arousal continuum
17. Breathing rate, heart beat, perspiration, nervous ticks, muscle tension, butterflies in the stomach
18. SUDS
19. Subjective Units of Disturbance
20. Most anxiety producing situation
21. Least anxiety producing situation
22. The other numbers between 0 and 100
23. Monitoring
24. Reduces

25. Early stages

26. Interfers too drastically with their behavior.



APPENDIX E

Name _____ SUDS level _____

1. Name two types of anxiety (according to Wolpe).

   a. _____

   b. _____

2. How do people become anxious? *i.e.* how does anxiety develop in a person?

   _____

   _____

3. What does the labelling process do to the neural activity connected with anxiety?

   _____

   _____

4. Give two ways in which monitoring anxiety level can help control anxiety?

   a. _____

   b. _____

5. What are some of the physiological things to pay attention to when monitoring anxiety level? (name at least three)

   _____

   _____

6. What does "SUDS" stand for?

   _____

7. What do the numbers in "SUDS" represent?

   _____

8. How can the notion of "SUDS" help control anxiety?

   a. _____

b. _____

9. What does 100 "SUDS" mean?

_____

10. What does 0 "SUDS" mean?

_____

11. A person who feels anxious, but not completely frazzled, is probably experiencing about _____"SUDS".

12. After having a pleasant day at the beach and a relaxing drive home in light traffic, most people would probably be around _____"SUDS".