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TITLE OF THESIS. INTELLECT, PERSONALITY & SUSCEPTIBILITY TO DESENSITIZATION

UNIVERSITY. U of A

DEGREE FOR WHICH THESIS WAS PRESENTED. Ph.D.

YEAR THIS DEGREE GRANTED. 1972

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Intellect, Personality and Susceptibility to Desensitization", submitted by Kingsley John Payne in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

The study was designed to determine the extent to which certain intellectual and personality variables facilitate psychotherapy by reciprocal inhibition. More specifically, the author set out to ascertain the relationship of intelligence, cognitive complexity, introversion, open-mindedness and hypnotic susceptibility to the successful resolution of public speaking anxiety. It was anticipated that, with the exception of intelligence, these factors would correlate positively with a decrement in anxiety effected by means of desensitization therapy as applied to the treatment group.

Accordingly, the Willoughby Schedule, a measure of what Wolpe terms "persistent unadaptive anxiety reactions" was administered to 154 university students. Thirty of them, randomly selected from those who scored "high" on items relating to public speaking, constituted the treatment group. Before treatment was instituted the following tests were also administered: IPAT Anxiety Scale, Eysenck Personality Inventory, Paragraph Completion Test, Dogmatism Scale, Cattell's Culture Fair Intelligence Test, Stanford Hypnotic Susceptibility Scale, and Personal Data Questionnaire. Three days prior to the first session, subjects were requested to prepare for a 10-minute talk, dealing with any topic of current interest to them. They were informed that their speech would be videotaped and simultaneously relayed to a class of 30 students. Analysis of videotaped recordings was subsequently

undertaken by three independent judges using Paul's Behavioral Checklist for Performance Anxiety.

Desensitization procedures, designed to alleviate public speaking anxiety and similar to those devised by Wolpe (1969), were conducted one hour a week over a period of six consecutive weeks. Upon the completion of the therapeutic program, post-testing involving the administration of the IPAT and Willoughby Schedule, was undertaken. The analysis of pre and post videotapes according to Paul's Criteria (1966) was also conducted.

Analysis of variance was carried out on pre and post scorings to determine the significance of the decrement in anxiety as measured by the Willoughby Schedule, IPAT Anxiety Scale and Behavioral Checklist. Pearson correlations between the variables relevant to the major thesis were calculated, in addition to correlational data relative to such demographic factors as age, sex and marital status.

Statistical analysis confirmed that the treatment had effected a significant reduction in anxiety as measured by the Willoughby Schedule. A trend in the hypothesized direction was also evidenced by the pre and post IPAT and Checklist scores, but the significance did not attain the 0.05 acceptance level. Contrary to the cited hypotheses, it was established that conceptual complexity, introversion, open-mindedness, and hypnotic susceptibility did not correlate with any decrement in anxiety induced by the desensitization treatment. Nevertheless, intelligence proved to be positively correlated with anxiety reduction, although this was in opposition to the predicted outcome.

There were also positive correlations between age and anxiety resolution as measured by the Willoughby Schedule and Paul's Behavioral Checklist. Additionally, marital status was found to be positively correlated with anxiety reduction as indicated by the IPAT.

ACKNOWLEDGEMENTS

I would like to extend special thanks to Dr. E. E. Fox for his wise and patient guidance.

I am also indebted to Dr. J. Paterson, Dr. D. Sawatzky, Dr. A. Qureshi for their constructive criticism and encouragement.

Finally, I wish to convey my fondest appreciation to Mum, Dad, Pat and Caroline, who have never lost faith, and to Bob and Connie Robertson, Ron and Gloria Masse, Nick and Wendy Skinner, Russ Lyon, Mick Fealy and Janice Grey, who will always be important to me.

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CHAPTER I

OVERVIEW OF THE LITERATURE

Desensitization procedures, employed in the resolution of maladaptive anxiety, were devised by Wolpe, in accordance with the counter-conditioning paradigm. Wolpe is one of the leading proponents of behavior therapy, which he defines as the use of established principles of learning (e.g., operant conditioning, classical conditioning, stimulus generalization, extinction, etc.) for the purpose of changing unadaptive behavior (e.g., phobias, tension states, sexual disorders, compulsions, etc.). Such principles, though initially established through animal experimentation, in restricted laboratory settings by such early and enduring workers as Pavlov, Watson, Thorndike, Hull and Skinner (Hill, 1962), have been extended into the realm of human behavior by people like Miller, Dollard, Mowrer, Wolpe and Bandura (Millon, 1967). The advocates of this orientation assert that the acquisition, modification and elimination of normal and aberrant behavior can be explained in terms of the principles of learning. Thus, for example, the genesis of maladaptive anxiety, can only be attributed to the stimulus conditions underlying its expression and not to some "inner personality disorder" (Staats and Staats, 1965). Anxiety thus becomes attached, by a process of conditioning, to neutral innocuous events. Under some circumstances, anxiety elicited by certain stimulus events is transferred, by a process of generalization, primary or

secondary, to other stimuli (Wolpe, 1958; Osgood, 1962). Eysenck postulated that when anxiety is manifest in the form of phobic reactions, its roots can be traced to some single traumatic event, whereas when experienced as diffuse and "free floating" is, in all probability, due to a series of sub-traumatic events (Eysenck and Rachman, 1965, p. 241; Spielberger, 1966, p. 182). Accordingly, for the behavior therapist, the resolution of anxiety, or any unadaptive habit, is effected by manipulating the conditions of learning such that the maladaptive behavior has no reinforcing consequences. This kind of approach represents a radical departure from the more traditional, psychodynamic schools of psychotherapy, in which maladaptive behavior is assumed to be symptomatic of some underlying, deep-seated problem, towards which one's efforts must be exclusively directed. Thus Freud, in his treatment of five-year-old Hans, afflicted with a severe phobia of horses, completely disregarded the child's history of frightening experiences with horses, in determining the origins and in planning the treatment of the problem. In fact, he concluded that the boy, caught up in the throes of the Oedipal conflict, had developed a fear of his father, of such a magnitude that it was too terrifying to contemplate and hence was repressed. However, since this defense mechanism was not totally effective in containing such an intense dread, the fear was displaced on to horses. Resolution of this debilitating phobia was regarded as contingent upon developing the boy's insight into the true nature of his feelings towards his father. Direct treatment through conditioning procedures would have been considered naive,

simplistic and ineffectual (Eysenck, 1965, pp. 95-131).

Wolpe traces the origin of behavior therapy to Watson and Raynor's (1920) well known experiment on little Albert, who was conditioned to fear a white rat and, by the process of generalization, other furry objects. Although the child left the hospital before any treatment regime could be instituted, it was suggested that the fear might have been eliminated by any one of four techniques - by experimental extinction, by "constructive" activities around the feared object, by "reconditioning" through feeding the child candy in the presence of the feared object, or by procuring competition with fear by stimulating erogenous zones in the presence of the feared object (Wolpe, 1970, p. 4). One of the first, and better known, systematic applications of these findings, to the control of human behavior, occurred when the extreme fears of a young boy were eliminated by feeding him in the presence of the conditioned aversive stimulus, a rabbit (Jones, 1924b). Each day, a caged rabbit was brought closer to the table where the child was eating, until ultimately he could handle the animal without concern.

The procedures of Pavlov, involving classical conditioning, and Bekhterev, concerned with instrumental conditioning, were also applied in the treatment of abnormal behavior, shortly after having been experimentally established. Thus, Yates (1970), in his analysis of the contribution of Russian psychology to the development of behavior therapy, notes:

> Pavlov not only published the results of his laboratory experiments on animals (Pavlov, 1927, 1928), but also published extensively on the application of his techniques and theories to abnormal behavior, both in general (Pavlov, 1932, 1941) and in relation to particular disorders, such as hysteria (Pavlov, 1933) and obsessional neuroses and paranoia (Pavlov, 1934). Likewise, Bekhterev published both his general experimental studies (Bekhterev, 1932) and considered their application to psychiatry (Bekhterev, 1912, 1923a, 1923b) (p. 13-14).

The use of experimentally determined principles in the diagnosis and management of aberrant behavior, evolving from the work of Pavlov and Bekhterev, exerted a profound influence on the thinking of a number of American psychologists. Thus, Yates continues (1970):

> The possibility of explaining abnormalities of behavior in Pavlovian terminology was explored in two remarkable papers by Watson (1916) and Burnham (1917) while simultaneously Mateer (1917) published a monograph on the application of conditioning techniques to children. Somewhat later, Burnham (1924) expanded his ideas in a book which is now regarded as a classic and a landmark, while Dunlap (1932), several years later, applied behavioristic techniques to a wide range of disorders. In the 1930's many attempts were made to explore the nature of neurosis by inducing "neurotic behavior" in animals such as sheep (Liddell, 1938), the pig (Liddell, 1938), the rat (Cook, 1939; Maier, 1939), and the cat (Masserman, 1943). In all of this latter work, the intention was to demonstrate, if possible, whether or not the principles derived from animal studies could usefully be applied to the study of neurotic behavior in human subjects (p. 32).

So, since the second decade of the present century there has been a steady accumulation of evidence attesting to the efficacy of techniques derived from controlled experimentation. However, despite this fact, and the growing disenchantment with traditional psychotherapies, it was not until the 1950's that behavior therapy became an established school of thought.

CHAPTER II

RELATED LITERATURE

Wolpian Reciprocal Inhibition

In fashioning his principle of reciprocal inhibition, Wolpe was inspired by the work of Pavlov, Hull, Masserman and by his own animal experimentation (Wolpe, 1970; Berenson and Carkhuff, 1967). He treated neurotic cats by getting them to eat in the presence of small and then gradually increasing "doses" of anxiety-evoking stimuli. He noted that the anxiety responses were inhibited by the eating and, furthermore, with repetition, increasing degrees of conditioned inhibition were built up, so that, ultimately, the anxiety-evoking potential of the stimuli was eliminated. From such observations, he formulated his principle:

> If a response, antagonistic to anxiety can be made to occur in the presence of anxiety-evoking stimuli so that it is accompanied by a complete or partial suppression of the anxiety responses, the bond between these stimuli and the anxiety responses will be weakened.

In his search for responses, other than eating, that might prove effective in inhibiting anxiety in the treatment of human neurotic states, Wolpe identified assertive responses, sexual responses and relaxation responses (Wolpe, 1958).

> In the first three classes of responses that I came to use in clinical therapy - (a) assertive responses, (b) sexual responses, and (c) relaxation responses - there are, as far as the autonomic system is concerned, persuasive indications of para-sympathetic ascendency.

> A good deal of evidence in favor of this with regard to assertive (angry) responses has been summarized by Arnold (1945). Ax (1953) has questioned Arnold's position, but his own observations reveal a tendency for the pulse and respiratory rates to be raised in fear and lowered in anger. In the realm of sexual responses, erection is subserved by the nervus erigens which emanated from the sacral parasympathetic plexus (Langley and Anderson, 1895). This plexus also supplies part of the innervation of the female sex organs. Parasympathetic responsiveness during sexual excitement is not confined to the sex organs, being manifested, for example in increased gastric secretion (Dumas, 1928). Sympathetic responses such as raised pulse rate, are also present, but in the genital organs they become prominent only in relation to ejaculation (Langley and Anderson, 1893). The parasympathetic effects of muscle relaxation are easily observed in anxious subjects trained in relaxation. In the course of a few minutes I have known the pulse rate drop thirty beats or more, breathing to become slower, and sweating palms to become dry or nearly dry (p. 72).

In his desensitization procedures, the main subject of this enquiry, reciprocal inhibition is effected by means of relaxation, on the assumption that deep muscle relaxation has autonomic effects antagonistic to anxiety. In designing his relaxation technique, Wolpe drew extensively upon the work of Jacobson (1938), who contended that the subjective awareness of anxiety was largely a function of muscle tension and that, accordingly muscle relaxation would inhibit any experience of this kind of emotional arousal. Jacobson demonstrated (1939, 1940) that such autonomic concomitants as pulse rate and blood pressure are significantly depressed by profound relaxation. Subsequently, it was shown that skin resistance and respiration rate are similarly affected (Clark, 1963; Wolpe, 1964). These assumptions are also supported by the work of Haugen, Dixon and Dickel (1958), Rolf (1963) and Shultz (1967).

Before the onset of the treatment program the therapist determines for the client a hierarchy of anxiety-provoking situations, on the basis of historical information, interview data and psychological testing. He then proceeds to converse the client with a technique for the induction of relaxation. When the patient is schooled in this art, he is encouraged to conjure up a visual image of each anxiety-inducing item, commencing with the lowest in the hierarchy while in a state of relaxation. This procedure is repeated until the stimuli lose their threatening properties. The patient is instructed to indicate, by raising a finger, when he is incapable of handling the visual images without experiencing anxiety.

Desensitization approaches to the resolution of maladaptive anxiety, have been rejected on the grounds that such techniques are addressed to surface symptoms. The changes thus effected are therefore of short duration, since symptom substitution inevitably ensues. This issue has been central to, what Kuhn has termed, the "paradigm clash", between behavioristic and psychodynamic schools of psychotherapy, a controversy that has been exacerbated by the reluctance, on the part of some behaviorists, to concede that symptom substitution ever occurs. This intransigence is more characteristic of the earlier workers in this field, who were, perhaps understandably, guilty of such naivety and regarded operant and classical conditioning procedures as a panacea for all ills (Franks, 1966a, 1967b). However, as Franks points out in his recent comprehensive appraisal of Behavior Therapy (1970) there has been a significant departure from these

limited, stereotypic strategies and a concomitant movement towards a "total behavioral approach", utilizing a variety of techniques in the overall management of the patient (Franks, 1970, p. 17).

> It does not follow that there is inevitably no place in the world of the behavior therapist for the notion of symptom substitution. While there is no reason to accept the dogma that conditioning therapy inevitably leads to symptom substitution, the opposing point of view, as developed by Yates (1958) in his outright dismissal of symptom substitution as a psychoanalytic myth and by Ullmann and Krasner (1965, p. 15) in their insistence that "there is no place in a psychological model for the concept of a symptom," would appear to be neither substantiated nor necessary....
>
> The occurrence of maladaptive behavior following treatment is not necessarily inconsistent with the behavioral model. For example, if one maladaptive behavior is successfully extinguished, a child may resort to another to gain his ends, and then to another - all parts of the individual's hierarchical repertoire of maladaptive behavior. An examination of circumstances under which symptom substitution occurs is thus likely to be more profitable than an engagement in partisan polemics (Lazarus, 1965; Cahoon, 1968). Both the Pavlovian model and the model of social learning (Bandura and Walters, 1963) make explicit the notion that, under certain circumstances, the elimination of one rewarding but deviant pattern may cause another deviant set of responses to achieve prominence (Franks, 1970, p. 4).

In fact, the psychological literature yields an abundance of material which purports to establish the efficacy of desensitization, in producing abiding cures. Yates (1970, p. 392) notes that even such a staunch advocate of the psychodynamic orientation as Weitzman (1967) is forced to conclude: "Of all the behavior therapy techniques, only systematic desensitization has been shown to be effective."

Much of the corroborating evidence, though persuasive, is

drawn from case studies (Wolpe, 1958, pp. 208-220; Lazarus, 1963, pp. 69-79; Kozma, 1967, pp. 37-40; Friedman, 1968, pp. 75-78; Wolpe, 1969, pp. 34-37). It therefore is subject to inherent limitations, since variables extraneous to treatment are uncontrolled and subsequent evaluation tends to be subjective, perhaps partisan. Retrospective studies, though hardly free from methodological deficiency, also lend supporting evidence. Wolpe followed up 210 neurotic patients who had been treated by reciprocal inhibition and discovered that with respect to a number of criteria (Knight's Criteria) found that almost 90% were considered "apparently cured" or "much improved" (Wolpe, 1958, p. 219). Similarly impressive results were reported by Lazarus with 408 neurotic patients. Using reciprocal inhibition 78% were described as "apparently cured" or "much improved". Furthermore, of 126 cases of severe neurosis, 62% were thus described with only one relapse over a two-year period (Lazarus, 1963, p. 136). A number of experimental studies, though suffering from such defects as small samples, fallibility of patient and therapist ratings or matching procedures, lend further confirmation to the assertion that reciprocal inhibition by desensitization is superior to, or at least as effective as, other psychotherapeutic approaches (Eysenck, 1960; Cooper et. a., 1965; Marks et. al., 1965; Gelder et al., 1967). Finally, in his expansive analysis of the experimental research pertaining to desensitization, Franks identified twenty reports of well-controlled experiments, ten of which included designs ruling out the intra-class confounding of therapist characteristics and treatment

techniques (Franks, 1970, p. 159).

Group Desensitization

Group desensitization is not likely to be as effective, in resolving maladaptive anxiety, as individual treatment. When several people are receiving this kind of therapy simultaneously, differences in relaxation responsivity, individual anxiety hierarchies and facility with imagery are neither as readily identified nor as easily accommodated, as when a single subject commands the undivided attention of the therapist. Any subject, who, for one reason or another, experiences great difficulty effecting a state of profound relaxation, could find himself confronted with disturbing images when only partially relaxed. In such an eventuality the condition could be exacerbated. Furthermore, members of a treatment group, even though subject to the same kind of situational anxiety (e.g., public speaking anxiety) could be more seriously debilitated in the period of time preceding the speaking ordeal than when actually involved in the presentation. If this kind of idiosyncratic behavior is not reflected in the group hierarchy, the prospects of improvement are minimized. Similarly, it is unreasonable to expect that every group member enjoys the same facility in conjuring up images of anxiety-eliciting stimuli. Therefore, it is not possible to assume that each individual is exposed to the stimuli for the same length of time. While limited and controlled exposure should ameliorate anxiety, under-exposure, resulting from inadequate imagery, could preclude desensitization. Any subsequent hierarchical presentation might

then evoke extreme anxiety despite initial relaxation.

Thus, despite the obvious advantages of economy, there are some inherent limitations in the group approach to desensitization. Nevertheless, examination of the relatively small number of reported studies, controlled and uncontrolled, justifies its continued practice. These findings are summarized in Table 3.

Though Franks confidently proclaims that group and individual procedures "reliably produced measurable benefits for clients across a broad range of distressing problems, in which anxiety was of Fundamental importance," he does indicate a need for future research to deal with questions, as yet unanswered.

> Can desensitization be effective when psychotic behavior is present? Is it useful with children? Are their limits or differential responses depending upon the extent of anxiety-eliciting stimuli, I.Q., verbal skills, habitual patterns or behavior or manner of dealing with stress? Other than the presence of depression or reactive anxiety, are there contraindications for desensitization? (Franks, 1970, p. 148).

In consequence, the current research project is concerned with ascertaining interactional effects of I.Q., conceptual complexity and certain personality variables with susceptibility to desensitization procedures. Specifically, those personality variables to be considered are hypnotic susceptibility, extraversion-introversion and dogmatism.

Table 3 (Franks, 1970, p. 131)

Summary of Investigations of Systematic Desensitization Applied in Groups

Author	Clients (subjects)					Therapist	
	Problem treated	Characteristics					Characteristics
		No.	Sex	Age	Other	N	Other
(66) Lazarus (1961)	Acrophobia Claustrophobia impotence; mixed phobias	35	M=12 F=23	$\bar{x}$= 33.2 SD= 9.9	Distressed volunteers	(1)	All Lazarus; Medical school
(67) Lazarus (1968)	Impotence	3	M	26-32	Outpatients	(1)	Lazarus; clinic
	Frigidity	3	F	24-33	Outpatients		
(68) Burnett & Ryan (1964)	Mixed*	(100)* 25	M=33 F=67	$\bar{x}$=42	"Rural" hosp. day care	2	No desensitization experience
(69) Rachman (1965) (70) Rachman (1966a)	Spider phobia	15	F	?	Volunteer students	2+ ?	? university
(71) Rachman (1966b)	Spider phobia	3	M=1 F=2	?	Volunteer students	?	? University

Table 3 (continued)

Author	Treatment				
	Assessment procedure*	No. of sessions	Total duration	Follow-up	Outcome*
(66)	External reports tolerance tests 1 self-report	$\bar{x}$=20.4 (10.1)*	$\bar{x}$=7 weeks	$\bar{x}$=9 months	(+)D> nov.
(67)	Wife's report	5	7 weeks	2 years	+
	Husband's report	14	14 weeks	6 months	+
(68)	T-ratings	? $\bar{x}$=25	$\bar{x}$=5 weeks	1 year (N-25)	+
(69) (70)	FT; avoidance test; EPI; ratings	11	6 weeks	3 months	(+)D> NT+ multinov.
(71)	Ft; avoidance test	50	?		+
(72) (73)	Test Battery grades	9	9 weeks	6 weeks and 2 years	(+)D> nov.> NT
(74)	Anxiety Scale; grades	8	? 8 weeks	6 months (N=7)	(+) D> NT+ nov.
(75)	FSS; avoidance test	4	4 weeks		(+)D> NT

D= systematic desensitization;
nov. = novel treatment or control group;
NT = no control

Table 3 (continued)

Author	Problem treated	Clients (subjects) Characteristics				Therapist Characteristics	
		No.	Sex	Age	Other	N	Other
(72) Paul and Shannon (1966) (73) Paul (1968)	Interpersonal performance anxiety	50 (72)*	M	19-24 Mdn= 21	Distressed students	(2)	Experienced; university clinic
(74) Katahn et al. (1966)	Test anxiety	43	M=57% F=43%	"Under-grads"	Psychology students	3	No desensitization experience
(75) Shannon and Wolff(1967)	Snake phobia	36	F	18-24 Mdn= 19	Volunteer students	(1)	Experiences; university clinic

INTELLECTUAL AND PERSONALITY VARIABLES

Intelligence

Most therapists, irrespective of orientation, devote a significant proportion of their time, in initial interviews, establishing rapport and conversing the patient with the rationale underlying the treatment, on the assumption that faith in the practitioner and commitment to the therapeutic sequence enhance the prospects of favorable outcome. This is, of necessity, accomplished through the medium of verbal communication. Wolpe, for example, in setting the stage for behavior therapy, is prepared to go to considerable lengths in explaining the origins of neurosis, according to his theoretical framework. He also assuages any irrational fears of insanity, argues for a rational cause of maladaptive behavior and conveys an attitude which is non-judgmental (Wolpe, 1970, pp. 56-58). Hence, it is reasonable to suppose that the individual who is intellectually well-endowed, would more readily comprehend the nature of the task and thus recognize and accept the efficacy of the prescribed procedures. Intelligence also has implication for subsequent phases of psychotherapy. In order to establish the suitability of desensitization, the therapist carefully examines historical information, interview data and test responses. As soon as the process is deemed appropriate, he then proceeds to determine, in conjunction with the patient, the hierarchy of anxiety-eliciting stimuli. Patients whose intellectual ability enables them to communicate with clarity and cogency, would presumably progress with more facility through these phases, so

minimizing the probability of misdiagnosis or ineffective hierarchy construction. Thus, although intelligence is perhaps more crucial in psychotherapies devoid of any non-verbal techniques and relying exclusively upon insight and interpretation, certain minimal levels would seem essential for most therapeutic systems. There is a paucity of empirical research dealing with this issue and most publications on the subject of psychotherapy take little or no cognizance of these factors. However, those that do make such reference, tend to support the argument that serious intellectual limitations, as indicated by I.Q. and verbal skills, militate against favorable prognosis (Alexander, 1963, p. 38; Ingham and Love, 1954, p. 145; Stacey and DeMartino, 1957, p. 19; Masserman, 1965, p. 61) except where conditioning procedures, involving little or no verbal instruction, are employed (Gagne, 1967, p. 195-197). The position assumed by Albert Ellis (1963) is representative of the position assumed of most psychotherapists on this issue.

> Highly intelligent patients, it must be admitted, seem to improve more quickly and more significantly with almost any kind of psychotherapy, including RT, than do moderately intelligent or relatively stupid patients. . . However, the rational-emotive therapist can accept patients of relatively low I.Q. and minimal educational background who could not possibly be helped by classical analysis and most other complex forms of psychotherapy. (p. 372).

In summary, there appears to be a marked reluctance, on the part of practising therapists, to indicate the precise levels of intelligence, beyond which psychotherapy is obviated. However, it seems that those individuals, not debilitated by a serious intellectual

deficit, should be capable of profiting from psychotherapy, as long as the principles and practices involved in the process can be communicated simply and directly.

Conceptual Complexity

Harvey, Hunt and Schroder (1961) define a concept as a system for organizing the environment into meaningful patterns by serving as a mediating link between stimuli and responses. According to their exposition, the most important structural characteristic of a concept is the degree of concreteness or abstractness. Lower animals show little variation along this dimension due to the compelling nature of external stimulation. In contrast, man, who is not similarly bound by the 'physical characteristics of the immediately impinging stimuli' displays enormous variability along the concrete-abstract dimension. Thus an ability to order the world in more abstract ways is indicative of conceptual complexity (Harvey, Hunt and Schroder, 1961, p.p. 1-25). In a more recent presentation of conceptual complexity, Schroder, Driver and Strufert (1967) adopt a similar posture. They assert that people of low conceptual complexity can be readily differentiated from those of high conceptual complexity. Individuals falling into the former category can be identified as being maximally controlled by external conditions. They typically draw upon a few absolute rules to govern the integration of impinging stimuli, tend to resolve any ambiguity by exclusion, and hence experience difficulty in the integration of discrepant information. In contrast, those exhibiting a high degree of conceptual complexity utilize a large

number of rules and associative linkages and thus display a greater capacity to integrate disparate ideas (Schroder et. al., 1967, pp. 16-18). The thesis of Schroder et. al. is essentially supported by a number of other independent investigations (Suedfeld and Hagen, 1966; Leventhal and Singer, 1964; Crockett, 1966; Bieri, 1966). In the light of this argument, it seems logical to conclude that individuals with a high degree of conceptual complexity, would more effectively integrate the principles and rationale of psychotherapy by reciprocal inhibition and therefore prove more responsive to the desensitization process than those with limited conceptual ability.

Extraversion-Introversion

In a previous study (Payne, 1969), designed to evaluate the effectiveness of systematic relaxation, it was apparent that while many subjects entered into the procedures without any show of reluctance, others proved to be guarded, defensive and sceptical. Although these clinical observations were subjective and unvalidated, it could be legitimately hypothesized that some personality attributes (e.g., extraversion, dogmatism, contra-suggestibility) would impair responsiveness to certain kinds of treatment approaches, while others (e.g., introversion, open-mindedness, suggestibility) would be facilitating. Evaluation of the work of Eysenck (1965), Rokeach (1960) and Das (1969) lends credence to this assumption.

Eysenck isolated two main dimensions of personality which he labelled extraversion-introversion and neuroticism or emotionality,

as opposed to stability or normality (Eysenck and Rachman, 1965). He describes the typical extravert as sociable, impulsive, easygoing, unreliable and risk-taking. In contrast the introvert is a quiet, retiring, introspective and serious person who plans ahead, likes a well-ordered life and keeps his feelings under close control. Emotionally unstable individuals are characterized by a tendency to display labile, strong, and easily aroused emotions, while, at the other extreme, there are people whose emotions are stable and less easily aroused. They are calm, even-tempered, carefree and reliable (pp. 19-20).

Predisposition associated with these factors determine vulnerability to neurosis under conditions of extreme stress or as Eysenck and Rachman phrase it:

> . . . we might perhaps postulate that the behavior of neurotics and, quite generally to people who have high scores on neuroticism, is causally related to an excessive lability of their autonomic system. More precisely, we may postulate that some people are innately predisposed to respond more strongly, more lastingly and more quickly with their autonomic system to strong, painful or sudden stimuli impinging upon the sense organs . . . . Our theory predicts that introverts would form conditioned responses more quickly, more strongly or more lastingly than would extraverted people; this follows from the attribution of higher excitation to introverts and of the attribution of greater inhibition to extraverts (pp. 30-36).

Accordingly, in terms of the above system, one would anticipate that introverts would be most responsive to the conditioning procedures involved in the process of desensitization. However, to the author's knowledge, this assumed relationship of introversion to desensitization has never been adequately validated. Studies examining the effects of drugs on conditioning lend substantiation to this assumption

(Franks and Laverty, 1955; Rachman, 1961a; Eysenck, 1963a). The most significant finding derived from such experimentation is that individuals, exhibiting behavior problems characterized by extreme extraversion, can be shifted over to a condition of greater introversion by the injection of stimulant drugs. Thus Eisenberg (1963) describes the effects of dextro-amphetamine on delinquent boys. Using a symptom check list and a sociogram procedure, it was found that there was a significant reduction in symptoms among subjects given dextro-amphetamine when contrasted with groups receiving either placebo or no medication. However, since there was no attempt to institute a program of therapy the effects were largely transitory (Eysenck, 1965, p. 55).

Dogmatism

A review of Rokeach's investigation, suggests that an individual's susceptibility to specific psychotherapeutic practices might be delimited by the extent to which he exhibits high scores on the Dogmatism scale. Rokeach's theoretical formulations and empirical research, lead him to conclude that capacity to assimilate and integrate new beliefs, necessary for the formation of new conceptual systems is a function of the 'belief-disbelief' system. If the belief-disbelief system is relatively closed, as indicated by the Dogmatism Scale, then the capacity to accept new beliefs is markedly impaired. Other investigators have published findings supporting this contention that the close-minded individual integrates his world in terms of preconceived categories when confronted with new problems and new

situations. The open-minded person by contrast is inclined to display a greater awareness of reality, be less guarded, more flexible, more optimistic and less hostile (Dymond, 1948, pp. 228-233; Adorno et. al., 1950; Rokeach, 1960, pp. 171-195; Myers and Torrance, 1961, pp. 156-159; Long and Filler, 1965, pp. 376-378; Zahn, 1965). It could be argued that the principles of Behavior Therapy constitute a departure from established, traditional thinking. Therefore, among the lay public, one would expect the close-minded individual to view desensitization procedures with suspicion and disbelief and thereby fail to profit by their application.

Hypnotic Susceptibility

There is an abundance of experimental evidence strongly suggesting that hypnotizability is a relatively stable and clearcut trait of personality (e.g., Das, 1963, pp. 1-4). In his discussion of the behavioral correlates of hypnosis, Das cites research demonstrating a positive, moderately high, relationship between the acquisition of a conditioned eye-blink and hypnotic susceptibility. This, and other substantiating findings (Das, 1958a, pp. 82-90; Das, 1958b, pp. 110-113; Hilgard, 1965; Barber, 1961, pp. 390-419; Lauer, 1965), have led Das to hypothesize that hypnosis is essentially a conditioned state where the conditioned stimuli are words. The conditioning component of hypnosis was manipulated in two experiments (Das, 1969, p. 114). He demonstrated that high and low levels of anxiety could be induced in patients highly susceptible to hypnosis. In consequence, a subject who displays a high measure of hypnotic susceptibility would

presumably prove responsive to techniques depending upon the elicitation of low levels of anxiety through progressive relaxation. Paul (1966) lends further evidence to this argument when he notes the similarity between progressive relaxation procedure and certain hypnotic induction sequences.

SUMMARY AND HYPOTHESIS

The proposed study was designed to determine the extent to which certain intellectual and personality variables facilitate psychotherapy by reciprocal inhibition. Even a cursory examination of the psychological literature reveals that desensitization compares most favorably with techniques derived from the more traditional psychotherapeutic orientations, at least in the management of certain kinds of problems. Despite a considerable accumulation of evidence, clinical and experimental, demonstrating that behavior therapy can be successfully applied in resolving a wide range of neurotic conditions, research which takes cognizance of intellectual and personality variables is conspicuously absent. Accordingly, the author proposes to ascertain the relationship of I.Q., cognitive complexity, extraversion-introversion, dogmatism and hypnotic susceptibility to successful resolution of maladaptive anxiety contingent upon public speaking. For the reasons outlined in the preceding discussion, it is anticipated that, with the exception of I.Q., these factors will feature significantly in the desensitization process as applied to the treatment group. Should the cited hypotheses be confirmed, it would be pos-

sible, in future, to identify those individuals who might prove to be unsuitable subjects for desensitization. Hence there would be an appreciable saving in time, effort and money, for all concerned. This does not necessarily mean that for such people psychotherapy has failed for it is quite conceivable that an alternative means of anxiety resolution would be more effective. In conclusion the following hypotheses were delineated:

Hypotheses

(1) Intelligence will not be found to covary, either directly or inversely, with anxiety resolution as effected by desensitization.

   A. Scores on Catell's Culture Fair Intelligence Test will not correlate, either directly or inversely, with a decrement in anxiety as indicated by the pre and post administration of the Willoughby Schedule.

   B. Scores on Cattell's Culture Fair Intelligence Test will not correlate, either directly or inversely, with a decrement in anxiety as indicated by the pre and post administration of the IPAT Anxiety Scale Questionnaire.

   C. Scores on Cattell's Culture Fair Intelligence Test will not correlate, either directly or inversely, with a decrement in anxiety, as indicated by the pre and post administration of Paul's Behavioral Checklist.

(2) Conceptual Complexity will be found to covary directly with anxiety resolution, as effected by desensitization.

A. Scores on the Paragraph Completion Test will correlate positively with a decrement in anxiety as indicated by the pre and post administration of the Willoughby Schedule.

B. Scores on the Paragraph Completion Test will correlate positively with a decrement in anxiety as indicated by the pre and post administration of the IPAT Anxiety Scale Questionnaire.

C. Scores on the Paragraph Completion Test will correlate positively with a decrement in anxiety as indicated by the pre and post administration of Paul's Behavioral Checklist.

(3) Introversion will be found to covary directly with anxiety resolution, as effected by desensitization.

A. Scores on Eysenck's Personality Inventory will correlate positively with a decrement in anxiety, as indicated in the pre and post administration of the Willoughby Schedule.

B. Scores on Eysenck's Personality Inventory will correlate positively with a decrement in anxiety, as indicated in the pre and post administration of the IPAT Anxiety Scale Questionnaire.

C. Scores on Eysenck's Personality Inventory will correlate positively with a decrement in anxiety, as indicated by the pre and post administration of Paul's Behavioral Checklist.

(4) Open-mindedness will be found to covary directly with anxiety resolution, effected by desensitization.

A. Scores on Rokeach's Dogmatism Scale will correlate significantly with a decrement in anxiety as indicated by the pre and post administration of the Willoughby Schedule.

B. Scores on Rokeach's Dogmatism Scale will correlate significantly with a decrement in anxiety as indicated by the pre and post administration of the IPAT Anxiety Scale Questionnaire.

C. Scores on Rokeach's Dogmatism Scale will correlate significantly with a decrement in anxiety as indicated by the pre and post administration of Paul's Behavioral Checklist.

(5) Hypnotic susceptibility will be found to covary directly with anxiety resolution, as effected by desensitization.

A. Scores on the Stanford Hypnotic Susceptibility Scale will correlate positively with a decrement in anxiety, as indicated by the pre and post administration of the Willoughby Schedule.

B. Scores on the Stanford Hypnotic Susceptibility Scale will correlate positively with a decrement in anxiety, as indicated by the pre and post administration of the IPAT Anxiety Questionnaire.

C. Scores on the Stanford Hypnotic Susceptibility Scale will correlate positively with a decrement in anxiety, as indicated by the pre and post administration of Paul's Behavioral Checklist.

CHAPTER III

DESIGN AND PROCEDURE

Sample

The initial sample consisted of 154 students comprising 5 elective undergraduate courses in Educational Psychology, offered during the 1971-72 winter session at the University of Alberta. All of them had completed at least two years of the four-year B.Ed. program. The initial testing was conducted during a regular class period, but all subsequent testing took place outside class time. The experimental group was selected from the original sample according to the criteria delineated in the procedural section.

Procedure

The Willoughby Schedule, a measure of what Wolpe terms "persistent unadaptive anxiety reactions" was administered to the 154 students in Educational Psychology. Thirty students, randomly selected from those who scored 3 ("usually . . .") or 4 ("practically always . . .") on those items relating to public speaking (1, 2, 5, 7, 13, 18, 20, 21), constituted the experimental group. The eligible subjects were then acquainted with the selection criteria and asked if they would volunteer to participate in a short treatment sequence (1 hour per week for 6 successive weeks), specifically designed to alleviate the distress and discomfort to which they are apparently subject, when confronted with a public speaking assignment. They were also

informed that participation would entail writing a number of tests, the results of which, though confidential, would not be disclosed to them until the completion of the project. The next phase involved the administration of the IPAT Anxiety Scale, the EPI, the Dogmatism Scale, the Stanford Hypnotic Susceptibility Scale, the PCT, Cattell's Culture Fair Intelligence Test and a personal data questionnaire. Before the first treatment period, the students were given three days in which to prepare for a 10-minute talk, dealing with any familiar topic of current interest to them. The participants were informed that their speech would be videotaped and simultaneously relayed to a class of 30 people (Graduate Students interested in the research project) so as to enable the experimentor to assess the intensity of anxiety exhibited on such occasions. An analysis of the videotape recordings by three independent judges was subsequently undertaken by consent of those involved. Finally the subjects were randomly divided into two equal groups for the treatment of public-speaking anxiety by means of desensitization procedures.

Treatment

Each group met for 1 hour a week over a period of six consecutive weeks and was directed by the same examiner. The first 30 minutes of session one was devoted to a brief resume of Wolpe's theoretical stance, regarding the origin of neurotic fears and their effective resolution by the implementation of the principles of desensitization. The following material, a greatly modified version of Wolpe's orientation procedures (Wolpe, 1969), was presented.

You have kindly consented to participate in a therapeutic sequence, selected to reduce the high level of anxiety experienced as a consequence of speaking in public. The main object of this first meeting is to familiarize you with the underlying theoretical rationale, which justifies the application of the therapeutic approach we are about to employ. I would appreciate it if you would refrain from verbalizing any reaction until the conclusion of our final session, whereupon there will be ample opportunity for discussion and evaluation, if you so desire.

The method, termed systematic desensitization, was originally devised by Joseph Wolpe. His theoretic posture is predicated upon the assumption that the acquisition of anxiety, like any other behavior, can be explained in terms of established principles of learning. Let me illustrate with an old-fashioned example. A child places his hand on the hot coal stove. He quickly withdraws the painful hand, tearful and fearful. His mother comforts him, but later notes that he keeps away from the stove and seems afraid of it. Clearly the child has learned a beneficial habit of fearing and avoiding an actually harmful object. A moment's reflection will bring to mind many instances demonstrating the obvious utility of this kind of conditioning--for example, walking alone and unprotected at night in a neighborhood of ill-repute, learning that one's employer is about to dismiss some of his staff, or being confronted with a mad dog. Nobody would come to treatment because he experiences anxiety on such occasions. However, it is a different matter when anxiety is aroused by experiences that contain no real threat - such as seeing an ambulance, crossing the street, or entering a crowded room. To be extremely anxious in such situations is obviously inappropriate, and can interfere with daily functioning in a most distressing way, as in the case with anxiety contingent upon public speaking. In all likelihood, you have experienced, for any one of a number of possible reasons, an intense anxiety reaction while presenting to an audience. In accordance with the principles of conditioning all subsequent efforts have elicited a similar response. It is the task of desensitization therapy to detach your anxiety from the situations that provoke it or, in other words, enable you to learn behavior which will inhibit such maladaptive responses.

Desensitization has been chosen on account of the wealth of clinical and experimental evidence attesting to its efficacy in effecting long-lasting resolution of situational anxiety. The treatment rests on the premise that

hand and to tense the muscles of the hand and forearm until they experienced a sensation of trembling throughout that area. After holding this position for five to seven seconds, they were told to relax and experience the relaxation as it embraced the tensed muscles until ultimately the hand and forearm felt completely relaxed. At this point the whole process was repeated before moving on to the following muscle groups: (2) right biceps (3) Left hand and forearm (4) Left biceps (5) Muscles of forehead and the top of the head (tensed by frowning heavily) (6) Nose, top of cheeks and upper lip (tensed by wrinkling the nose) (7) Jaw muscles and cheeks (tensed by drawing back the corners of the mouth) (8) Chin and throat muscles (9) Chest and back muscles (10) Abdominal muscles (11) Right upper leg (12) Right calf (13) Toes and arch of foot (tensed by pressing down on the toes and up under the arch (14) Left upper leg (15) Left calf (16) Left foot.

The first half of session two was devoted to relaxation training, while the second half was concerned with hierarchy construction. In order to facilitate the latter, the ultimate goal of therapy was defined as the ability to present a 10-minute speech before 30 peers, without being afflicted with undue anxiety. It was assumed that there would be adequate time for preparation, that the topic would be chosen from a familiar interest area, and that the performance would not be formally evaluated. With this specific objective in mind, the students were divided into 3 sub-groups of 5, and assigned the task of identifying and ranking relevant anxiety-evoking stimuli. The small

group members were advised to make the hierarchical gradations sufficiently numerous to accommodate all individual contributions. By the end of this session the sub-groups had completed a hierarchy acceptable to each of their members.

Session three was similarly concerned with both hierarchy construction and further relaxation training. At the commencement of this session the larger group of 15 examined each sub-group hierarchy and fashioned a composite structure, subsuming all features considered to be of significance. In the interim period prior to the fourth meeting the examiner derived a single hierarchy, incorporating all the contributions furnished by each larger group. Before instituting desensitization proper the students examined the final hierarchy, but they decided that it was not necessary to introduce any further changes.

During session four the last sequence of relaxation training was instituted (30 mins.) and this was followed by desensitization proper, conducted thus:

Desensitization Procedures (Wolpe, 1909)

> I am now going to ask you to imagine a number of scenes. You will imagine them clearly and they will generally interfere little, if at all, with your state of relaxation. If, however, at any time you feel disturbed or worried and want to draw my attention, you will be able to do so by raising your left index finger. In such an eventuality you will be asked to remove the disturbing scene from your imagination and to give your attention once more to relaxing (20 seconds). To begin with I want you to imagine that you are standing at a familiar street corner on a pleasant morning watching the traffic go by. You see cars, motorcycles, trucks, bicycles, people and traffic lights. (Pause 15 seconds). Now stop imagining that scene and give all your attention to relaxing. If

> the scene disturbed you in the slightest degree I want you to raise your left index finger. Now imagine the scene where you are told that in three weeks you are to present your 10-minute speech (5 seconds). Now stop imagining the scene and concentrate all your attention upon sustaining a state of relaxation. Use the skills you have recently acquired (20 seconds). Now imagine that scene again (10 seconds). Once again remove from the imagination any thoughts or images relative to that scene and give all your attention to relaxation (20 seconds). Imagine the scene again (15 seconds). Stop the scene and think only of your relaxed body (20 seconds). If you felt any disturbance raise your left index finger (If any member of the group raises the finger the sequence is repeated until no disturbance is indicated).

This desensitization was continued for the duration of session 5 and during the first 30 minutes of the last session. In the two-hour period allocated to this practice each group worked through the complete hierarchy 3 times. In the remaining time the composite hierarchy items 0 - 9 inclusive, were additionally presented (See Appendix F).

Upon the completion of the therapeutic program, the post-testing was conducted and subjects were scheduled for a post-treatment videotaping session conducted as before. The analysis of pre and post treatment videotapes using Paul's criteria was conducted so that judges were unable to distinguish between pre and post presentations.

INSTRUMENTS

IPAT Anxiety Scale Questionnaire

Cattell and Scheier (1956, 1957), using techniques of factor analysis, derived sixteen personality traits from the four to five thousand items constituting all known personality questionnaires currently in use. Five of these sixteen major personality dimensions

apparently form a cluster and are related to the psychiatric evaluation of anxiety (Levitt and Persky, 1962, pp. 458-461; Cattell and Scheier, 1961).

The IPAT Anxiety Scale consists of forty questions, distributed among the five anxiety measuring factors. Some of these factors (1-20) reveal what Cattell refers to as "overt, symptomatic, conscious anxiety" and others (21-40) the more covert, unconscious manifestations (Cattell and Scheier, 1963, pp. 6-7).

There is considerable research demonstrating correlations between anxiety as measured by the IPAT and other measures, psychological, physiological and behavioral (Cattell and Scheier, 1961). Correlations of 0.3 to 0.4 have been found between psychiatric clinical consensus and IPAT anxiety scores. This is noteworthy, given the considerable discrepancy between individual diagnostic pronouncements of clinicians (Cattell et. al., 1963, p. 8). Furthermore, it has been shown that IPAT scores clearly distinguish between normals and high anxiety neurotics (Cattell and Rickles, 1964, pp. 459-465). Additionally, there are studies establishing correlations with broader personality measures (Kahn et. al., 1964, Chap. 13); to tests measuring neurotic trends (Scheier, 1967, p. 9); and to tests directly measuring anxiety and used effectively over a large range of age, educational and cultural levels (Scheier, 1967, p. 9).

Eysenck Personality Inventory

The Eysenck Personality Inventory measures personality in terms of two dimensions, identified as extraversion-introversion and

neuroticism-stability. It is a modification and extension of the Maudsley Personality Inventory, but, according to Eysenck it constitutes a considerable improvement (Eysenck and Eysenck, 1968, p. 5). He lists the advantages as follows:

> (a) The EPI consists of two parallel forms, thus making possible retesting after experimental treatment without interference from memory factors. (b) The EPI items have been carefully reworded so as to make them understandable even by subjects of low intelligence and/or education. (c) The correlation between extraversion and neuroticism on the MPI was small but nevertheless marginally significant; suitable item selection has caused it to disappear in the EPI. (d) The EPI contains a Lie Scale which may be used to identify subjects showing "desirability response set". (e) The retest reliability of the EPI is somewhat higher than that of the MPI. (f) Further direct evidence is available of the validity of the EPI as a descriptive instrument of the behavioral manifestations of personality (p. 5).

The retest reliability was established by administering the inventory to two groups of normal subjects, the time lapse amounting to one year and nine months respectively. He arrived at scores of 0.84 to 0.94 and 0.80 to 0.97, extremely high considering the lengthy time interval. Similarly impressive validity (factorial, construct and concurrent) measures were obtained (Eysenck and Eysenck, 1968, pp. 16-17).

Eysenck asserts, with some justification, that his inventory has been usefully employed in a variety of situations. The EPI has been used in investigations in applied market research (Wells, Egeth and Wray, 1961, pp. 271-272); employee selection and rating (Cooper and Payne, 1967, pp. 45-57); and in educational counseling and guidance (Jensen, 1965b).

Dogmatism Scale

Rokeach (1960) constructed this scale in accordance with his theory of belief systems. The main purpose of the Dogmatism Scale is to measure individual differences in open and closed belief systems (Rokeach, 1960, p. 96). Subjects indicate disagreement or agreement with each item on a scale ranging from -3 to +3 with the 0 point excluded to force responses toward one extreme or the other. The scale is ultimately converted to a 1-7 scale by adding a constant of 4 to each item score before arriving at a total score by summing the scores obtained on all items.

After a series of revisions the number of items was finally reduced to forty. This shortened version yielded reliability figures ranging from 0.68 to 0.93, derived for samples from the Midwest, New York and England (Rokeach, 1960, p. 88). These findings were subsequently confirmed in a recent three-month test-retest study at the University of Alberta (Sawatzky, 1968).

In the validation of the Dogmatism Scale by the Method of Known Groups, Rokeach had graduate students in psychology select high and low dogmatic subjects from among their personal friends or acquaintances. It was established that the high dogmatic subjects scored significantly higher than the low dogmatic subjects on the Dogmatism Scale. Further evidence attesting to the validity of this scale was furnished by Rokeach, who demonstrated significant correlations between scores obtained on the F-scale and those obtained from the Dogmatism Scale (Rokeach, 1960, p. 129).

The Dogmatism Scale has been used extensively, in psychological research, since its development more than ten years ago and it is still considered to be a valuable instrument (Mouw, 1969, pp. 365-369; Sawatzky and Zingle, 1969, pp. 395-400; Wittmer and Webster, 1969, pp. 499-504; Linton, 1968, pp. 49-53).

Stanford Hypnotic Susceptibility Scale

These scales are the outgrowth of a long-term study of individual differences in susceptibility to hypnosis, begun by Waitzenhoffer at the University of Michigan and Stanford University. In the construction of this test Weitzenhoffer and Hilgard acknowledge their indebtedness to Friedlander and Sarbin's scale (1938). Some of their items and procedures have been retained and the modifications and implementations introduced were derived from experience with their scale (Weitzenhoffer and Hilgard, 1965).

The scale is comprised of a complete set of instructions for the induction of hypnosis and for measuring hypnotic susceptibility. Upon the completion of the sequence, a final score on the 12-item scale is determined by an interrogatory amnesia.

Weitzenhoffer and Hilgard tested the scales on a large sample of students arriving at a retest-reliability score of 0.83. This claim has been substantiated by the administration of the scale to male prison volunteers. Norms obtained for this sample are similar to those reported for undergraduate students (Wickramasekers, 1969, pp. 99-102). According to Weitzenhoffer and Hilgard, subsequent hypnotic experience with subjects who have scored high and low suggest

observable manifestations of anxiety, the presence or absence of which is determined by independent judges during successive thirty-second time intervals extending over a period of four minutes (Paul, 1966, p. 13). The behaviors featured in this checklist are derived from Clavenger and King's checklist (1961). They developed their instrument after an exhaustive review of the pertinent literature and by consideration of the observations of experienced speech instructors. Paul's checklist was used for the first time in a study evaluating the relative merits of insight and desensitization therapy in resolving anxiety related to public speaking. Anxiety as measured by the checklist significantly correlated with other indices, physiological and cognitive. The reliability as calculated by analysis of variance exceeded .93 for a Pretreatment Test, Speech (N=74) and .96 for a Post-Treatment Test, Speech (N=67) (Paul, 1966, p. 31). For the purposes of the present study an interjudge reliability was estimated at 0.77.

The Paragraph Completion Test

The Paragraph Completion Test, a measure of cognitive complexity, is comprised of six sentence stems. Adults have a period of ten minutes in which to complete the test. Each response is evaluated on a 7-point scale according to its conceptual complexity. Interrater reliability correlations have been high for a subjective instrument. The estimated reliability varies between .80 and .95 (Schroder, Driver and Streufort, 1967, p. 190) and internal consistency ranges from .57 to .75 (p. 106). These findings were confirmed by Fox

significantly diminished Willoughby scores (Wolpe, 1958, pp. 139-165).

CHAPTER IV

FINDINGS AND CONCLUSIONS

Introduction

Analysis of variance procedures were conducted on pre and post scorings to determine the significance of the decrement in anxiety, as measured by the Willoughby Schedule, IPAT Anxiety Questionnaire and Behavioral Checklist. The criterion significance was established at the .05 level. Pearson correlations between the variables relevant to the major thesis were calculated, as well as correlational data relative to such demographic factors as age, sex and marital status.

Analysis of Variance

Willoughby Schedule: In order to determine if there was a decrement in anxiety over the treatment period, it will be recalled that the Willoughby Schedule was administered pre and post. The means derived from both administrations appear below:

TABLE I

COMPARISON OF MEANS ON PRE AND POST WILLOUGHBY SCHEDULE

Administration	Number	Mean	Variance	Standard Deviation
Pre Willoughby	28	43.64	114.61	10.71
Post Willoughby	28	35.68	182.52	13.51

Analysis of variance (TABLE II) reveals that the observed difference between means is significant beyond the .05 level:

TABLE II

SUMMARY OF DIFFERENCES BETWEEN PRE AND POST WILLOUGHBY SCORES

Source of Variation	SS	MS	DF	F	P
Groups	0.89	888.00	1	5.98	0.02
Error	0.80	148.57	54		

Conclusion

Thus, it may be concluded that a general and significant reduction in anxiety was experienced by the subjects over the treatment sequence, according to scores on the Willoughby Schedule.

IPAT Anxiety Questionnaire

To establish whether the pre and post administration of the IPAT Anxiety Questionnaire reflected a reduction in anxiety as a function of the treatment, the respective means were derived (TABLE III).

TABLE III

COMPARISON OF MEANS ON PRE AND POST IPAT QUESTIONNAIRE

Administration	Number	Mean	Variance	Standard Deviation
Pre IPAT	28	37.75	146.64	12.11
Post IPAT	28	31.68	178.97	13.38

The disparity between the means was appreciable, although the analysis of variance indicated that the criterion level of .05 was not attained (TABLE IV).

TABLE IV

SUMMARY OF DIFFERENCES BETWEEN PRE AND POST IPAT SCORES

Source of Variation	SS	MS	DF	F	P
Groups	0.52	516.06	1	3.17	0.08
Error	0.88	162.80	54		

Conclusion

The treated subjects evidenced a perceptible, though not significant, reduction (beyond .05) in anxiety as measured by the IPAT Questionnaire. A trend supportive of the effectiveness of the treatment sequence was evident beyond the .10 confidence level.

Behavioral Checklist: Mean values of pre and post Checklist stores were calculated, so as to ascertain the efficacy of the applied treatment. The findings are recorded in TABLE V, which appears below:

TABLE V

COMPARISON OF MEANS ON PRE AND POST BEHAVIORAL CHECKLIST

Administration	Number	Mean	Variance	Standard Deviation
Pre Checklist	28	67.86	313.76	17.71
Post Checklist	28	62.86	295.61	17.19

Although a discrepancy between mean values is apparent, the analysis of variance procedures demonstrated that it was not of significant proportions (TABLE VI).

TABLE VI

SUMMARY OF DIFFERENCES BETWEEN PRE AND POST CHECKLIST SCORES

Source of Variation	SS	MS	DF	F	P
Groups	0.35	350.00	1	1.15	0.29
Error	0.16	304.68	54		

Conclusion

According to the Behavioral Checklist the decrement in anxiety effected as a consequence of the treatment program did not prove to be of significance.

Summary of Conclusions

Statistical analysis of the data confirmed that the treatment

effected a significant decrement in anxiety as measured by the Willoughby Schedule. Experimental findings generated by pre and post administration of the IPAT Anxiety Questionnaire and the Behavioral Checklist did not meet the required .05 acceptance level. A trend in the hypothesized direction was, however, evident in the latter instances.

Pearson Correlations

Two kinds of correlational data are reported; that relating to the major hypotheses and findings incidental to the latter but of considerable interest and import.

Hypotheses

Conclusions derived from the correlational analysis (Appendix G) refutes all the major hypotheses:

(1) Intelligence was found to covary directly with anxiety resolution as effected by desensitization or more specifically:

   A. Scores on Cattell's Culture Fair Intelligence Test correlated directly (0.44) with a decrement in anxiety as indicated by the pre and post administration of the Willoughby Schedule.

   B. Scores on Cattell's Culture Fair Intelligence Test correlated directly (0.45) with a decrement in anxiety, as indicated by the pre and post administration of the IPAT.

C. Scores on Cattell's Culture Fair Intelligence Test correlated directly (0.54) with a decrement in anxiety, as indicated by the pre and post administration of Paul's Behavioral Check List.

(2) Conceptual Complexity did not covary, directly or indirectly with anxiety resolution, as effected by desensitization.

A. Scores on the PCT did not correlate with a decrement in anxiety as indicated by the pre and post administration of the Willoughby Schedule.

B. Scores on the PCT did not correlate with a decrement in anxiety as indicated by the pre and post administration of the IPAT Anxiety Scale.

C. Scores on the PCT did not correlate with a decrement in anxiety as indicated by the pre and post administration of the Paul's Behavioral Check List.

(3) Introversion did not covary, directly or indirectly with anxiety, resolution, as effected by desensitization.

A. Scores on Eysenck's Personality Inventory did not correlate with a decrement in anxiety, as indicated by the pre and post administration of the Willoughby Schedule.

B. Scores on Eysenck's Personality Inventory did not correlate with a decrement in anxiety, as indicated by the pre and post administration of IPAT.

C. Scores on Eysenck's Personality Inventory did not correlate with a decrement in anxiety, as indicated by the pre

and post administration of the Paul's Behavioral Check List.

(4) Open-mindedness did not covary, directly or indirectly, with anxiety resolution as effected by desensitization.

A. Scores on Rokeach's Dogmatism Scale did not correlate with a decrement in anxiety as indicated by the pre and post administration of the Willoughby Schedule.

B. Scores on Rokeach's Dogmatism Scale did not correlate with a decrement in anxiety as indicated by the pre and post administration of the IPAT.

C. Scores on Rokeach's Dogmatism Scale did not correlate with a decrement in anxiety as indicated by the pre and post administration of the Paul's Behavioral Check List.

(5) Hypnotic Susceptibility did not covary, directly or indirectly with anxiety resolution as effected by desensitization.

A. Scores on the Stanford Hypnotic Susceptibility Scale did not correlate with a decrement in anxiety, as indicated by the pre and post administration of the Willoughby Schedule.

B. Scores on the Stanford Hypnotic Susceptibility Scale did not correlate with a decrement in anxiety, as indicated by the pre and post administration of the IPAT.

C. Scores on the Stanford Hypnotic Susceptibility Scale did not correlate with a decrement in anxiety, as

indicated by the pre and post administration of Paul's Behavioral Check List.

Summary of Conclusions from Correlational Analysis

Contrary to the cited hypotheses, it was established that conceptual complexity, introversion, open-mindedness and hypnotic susceptibility did not correlate with any decrement in anxiety induced by the desensitization treatment. Nevertheless, intelligence proved to be positively correlated with anxiety reduction, although this was in opposition to the predicted outcome.

Other Findings

There were significant positive correlations between age and cognitive complexity (0.34), intelligence (0.24) and anxiety resolution as measured by the Willoughby Schedule and Paul's Behavioral Check List (0.32; 0.32). In contrast, negative correlations were established with dogmatism (-.36) and hypnotic susceptibility (-0.47). Additionally marital status was found to be positively correlated with cognitive complexity (0.34) and anxiety resolution as measured by the IPAT (0.30), whereas it was negatively correlated with dogmatism (-0.22) and extraversion (-.29).

highly significant in the resolution of anxiety conducted according to the procedures outlined in this study. Although, one must caution against over generalization, it does seem that high intelligence facilitates the understanding of the underlying rationale upon which technique and practice are premised and thus serves to elicit commitment to therapist and regimen. Over recent years there has been a growing recognition among behavior therapists of the importance of cognitive variables in the therapeutic process (Lazarus, 1971). While impressive results have been attained in the treatment of psychotics and retardates by procedures involving little or no verbal explanation (Ayllon, 1963, pp. 53-62; O'Leary and Becker, 1967, pp. 637-642), there is an increasing tendency to interpret the therapeutic program to the recipient, even when deliberate manipulation of reinforcement contingencies takes precedence over insight methods depending upon inter-personal exchange (Homme, 1971; Benson, 1969).

Initially, it would seem that those of average or below average intellectual facility are disadvantaged. However, one must not lose sight of the fact that the induction procedures deployed in this project were specifically designed for University students of some years standing. The examiner's theoretical presentation, which preceded desensitization, could be modified within reasonable limits, to accommodate the needs and abilities of the patients involved. Thus, it might be necessary to simplify the language, make generous use of concrete, relevant examples and permit ample time for reflection and clarification, in order to render the less well endowed individual more amenable to therapy. By way of implication and summary, if

intelligence is positively correlated with anxiety amelioration, as was the case in the present study, it would appear that treatment programs, devised for the resolution of situational anxiety, might have to be modified in accordance with the intellectual facility of those participating.

Conceptual Complexity

In contrast to the author's prognostication, the response to the treatment was not governed by the relative "complexity" of the subject's conceptual structure. In retrospect, there are a number of possible reasons why the "complex" person failed to enjoy any distinct advantage despite his supposed ability to generate "complex integration rules for impinging stimuli" (Schroder et. al., 1967, p. 23). In the first place, the nature of the induction process was such that the therapist, rather than the patient, was confronted with the task of reconciling diverse, ambiguous and often contradictory material. In order to structure a coherent rationale, he was required to transcend the polemics obfuscating the dialogue between opposing schools of thought. Assuming this goal was accomplished, the strategy employed would be readily comprehended by the cognitively simple individual, even though he tends to formulate attitudes and decisions on the basis of a narrow band of salient information (Schroder et. al., 1967, p. 16). Furthermore, once therapy proper was instituted, the subject played a relatively passive, reactive role so that the cognitively limited person would not be required to display high levels of information processing. On the other hand, although the cognitively

complex individual can apparently profit from desensitization, one must not overlook the fact that he might respond even more favorably to the challenge of therapies which demand a more active, interpretative patient role. In conclusion, it would appear, on the basis of present evidence, to be extremely difficult to predict the outcome of therapy solely by the degree of cognitive complexity displayed.

Hypnotic Susceptibility

Detailed observations, conducted and recorded during, and subsequent to, the testing of hypnotic susceptibility, furnished some information which could account for the absence of any relationship between susceptibility and benefits accruing from the treatment provided.

It became apparent during the administration of the Stanford Scale that, while many subjects entered into the experience with interest and enthusiasm, there were others who seemed very guarded and mistrustful. Those who were unable to relax prior to and during the induction exercises, invariably proved to be of low susceptibility. This does not necessarily mean that these people are resistent to conditioning, assuming that this process is the most important component of hypnosis (Das, 1958a, pp. 82-90). Their intractibility could just as likely be attributable to a reluctance to relinquish control. This is understandable when you consider the widespread misconceptions and distortions surrounding hypnotic phenomena. Moreover, it seems unreasonable to conclude that the unsuitable subject for hypnosis will be similarly unaffected by other modes of relaxation, such as those typically used by Wolpe. Finally, it was also noted that the ability

to effect a state of relaxation, though apparently prerequisite, did not ensure a high measure of hypnotic susceptibility. In the light of the above argument, a significant correlation between anxiety reduction and hypnotic susceptibility would not be anticipated.

Introversion-Extraversion

The present analysis revealed no correlation between introversion and susceptibility to the desensitization program. Since the process of conditioning is considered integral to desensitization therapy, the above finding seems counter to the position of Eysenck (1970), who asserts that introverts condition more effectively than extraverts. However, careful scrutiny of his work does yield some explanation. Thus one could argue that the bond between the anxiety-evoking stimuli and the anxiety responses will be less firmly established and, more dependent upon adverse circumstance than conditioning history. In the case of the introvert, the converse applies, in that the bond can easily be sustained on the basis of previous experience, even in the absence of further exposure to traumatic incidents. Therefore, the emotional reaction of the extravert, however intense, is presumably more subject to dissipation, particularly if partially ameliorated through relaxation. This supposition is consonant with the findings of a number of investigators (e.g., Wolpe, 1970; Rachman and Hodgson, 1967) who have shown that, in some cases (conceivably extravert subjects) complete suppression of anxiety is not essential in effecting cure by reciprocal inhibition.

Additionally, there is some suggestion that the process of

extinction plays a significant part in desensitization (Gale et. al., 1966; Gambrill, 1967) even though, typically, the application of this principle in the absence of relaxation is demonstrably less effective than the two combined (Davison, 1968c). Eysenck's pronouncements would indicate that extinction could feature prominently in the treatment of extraverts by desensitization. Their tendency to extinguish may well compensate for their lesser facility in relaxation. This could account for the absence of any correlation between extraversion-introversion and susceptibility to desensitization in the present study.

Dogmatism

The closed-minded individual apparently displays the need to "structure his world rigidly" and has a tendency toward "premature closure in addition to a general intolerance of cognitive ambiguity" (Rokeach, 1960, p. 17). The author has postulated that a person possessing such characteristics could be seriously hampered in his ability to assess the true value of therapeutic procedures of an unfamiliar nature. The discussion which follows attempts to explain why, in actuality, there was no such correlation between the extent of dogmatism and therapeutic gain as illustrated by anxiety reduction.

In order to predict, with any degree of assurance, the response of the highly dogmatic individual, one must have some knowledge of his existing attitudes towards the designated therapy. If he responds to all therapeutic methods with suspicion or disapproval, or if fully committed to some alternative form, he is likely to prove highly

unresponsive and unaffected. Even when the approach employed is compatible with his belief-disbelief system, his potential improvement might be either impaired or facilitated by his perception of the practitioner. For example, the close-minded recipient could negate the efficacy of the treatment which is congruent with his beliefs if the therapist is regarded as being unrepresentative of some established authority. This can be easily effected by recourse to the mechanism of isolation (Rokeach, 1960, p. 36), one of the many devices available to the close-minded individual for reconciling contradictory ideas. Rokeach's (1960) thesis also suggests that the open-minded person would more likely align himself with an argument when given an opportunity to form his own judgement, after weighing all the relevant issues. Such a person could easily be frustrated by the orientation process employed since its brevity obviated a thorough appraisal of competing interpretations. In conclusion, it would appear that, in the present instance at least, one cannot effectively ascertain the consequence of relative degrees of dogmatism merely by the extent to which the trait exists.

Other Relevant Findings

Many of the significant findings, incidental to the central focus of this enquiry, are consistent with existing theory and/or empirical evidence. However, some elaboration and interpretation seems warranted.

Those who participated in the treatment program were University students and therefore it is reasonable to suppose that age is directly related to educational standing, and/or work experience, either of

which would tend to temper any predisposition to dogmatic thinking. Similarly, commitment to a marital relationship would likely develop attitudes antithetical to close-mindedness, in that some tolerance and acceptance of values and beliefs, not formerly subscribed to, would be required for compatible living. The fact that marriage frequently entails intense and continuous interpersonal exchange might also account for its positive relationship with readings on the PCT, since this instrument was designed to assess complexity within the interpersonal domain (Schroder, Driver and Streufert, 1967). One might also anticipate that age, work history, and educational attainment would extend the scope and nature of personal relationships and thereby reduce the tendency to perceive one's social environment from narrow perspectives.

A number of intelligence tests (Butcher, 1970) have been devised which purport to minimize the contaminating effects of social class, cultural heritage and educational background, but it is clear that these factors significantly influence performance on tests of this kind. Hence, it is not surprising that an older person, who is striving for intellectual achievement and with experience of academic success, would enjoy some advantage, as indicated by the positive correlation between age and intelligence for the subjects treated.

The inverse relationship between age and hypnotic susceptibility remains open to conjecture. There have been few careful experimental studies of this relationship, probably because investigation in this area is hampered by the fact that susceptibility scales are still in a rudimentary stage of development (Moss, 1965, p. 24). Inferences with

respect to the interactional effects of extraversion and marital status must also be confined to the realm of speculation since, to the author's knowledge, there is no existing evidence which might confirm or account for such a negative correlation. Eysenck (1970) portrays the typical extravert as outgoing, attention-seeking, gregarious and impulsive. While such proclivities could have high value in creating and sustaining pre-marital relationships, the reciprocal, interdependent, dyadic character of marriage might diminish their functional value. If one accepts this formulation, then the negative correlation between extraversion and marital status could be attributed to the declining incidence of extravert behavior upon the onset of marriage.

It was not the author's intention to conduct an exhaustive analysis of this supplementary data. However, it is anticipated that the tentative hypotheses put forward will stimulate further interpretation, and hopefully generate empirical exploration of a more extensive and rigorous nature.

Summary and Implications

Although the nature of the group receiving treatment precludes extensive generalization, this study reveals some factors which apparently render people more responsive to anxiety resolution according to Wolpean prescription. Those who are older, highly intelligent or married appear to enjoy an advantage over those who do not exhibit these characteristics. Thus, the present study reveals that certain personal variables inhibit or enhance the desensitization processes. Moreover, one may now conjecture on the basis of such findings that

An important criterion, typically neglected in studies purporting to show the effectiveness of desensitization, is the degree of complexity of the presenting problem. There has been widespread acceptance of desensitization as a potent means of resolving monosymptomatic phobias, whose genesis can be simply and adequately explained in terms of conditioning principles (Buss, 1968, p. 162). Its suitability in the treatment of complex cases, defined in terms of etiology and symptom constellation, has more frequently been subject to reservation. Wolpe's (1970) clinical citations notwithstanding, it appears that this argument is not without some justification. Public speaking anxiety contingent upon repeated failure could well be a function of any number of factors, including intellectual deficit, inadequate preparation, intrusion of irrelevant ideas, pervasive feelings of inferiority or obsessional concern with unimportant detail (Meyer and Chesser, 1970). Moreover, the continuing presence of maladaptive anxiety could also secure cherished secondary gains such as the attention, affection and support of relatives and friends. If this kind of gratification is unavailable by any other means, commitment to desensitization could well be only perfunctory. Desensitization may or may not, therefore, be the most effective means of dealing with complex problems, even when anxiety is identified as a significant component.

Although comprehensive and astute diagnosis is imperative for successful treatment, one should be cognizant of the tendency to think in terms of etiology, symptomatology and methodology to the exclusion of the patient's values, attitudes and preferences. Ideally, one

should be capable of recognizing and transcending personal bias and predilection. Lazarus (1971) importunes the prospective practitioner to guard against procrustean practices which can so easily be reinforced and perpetuated:

> A large percentage of patients are most obligingly suggestible. Those who end up in the hands of Freudian therapists provide "evidence," especially during their dreams, of infantile sexuality; while Jungian analysants end up convincing their analysts of the existence of a racial unconscious. Patients who consult Wolpeans are most invariably phobic and hypersensitive. In other words, when a therapist has a strong theoretical bias, no matter what the direction, he will inadvertently influence his patients to react in a manner which "proves" his own theoretical assumptions . . . The trouble is that even therapists, who lack any obvious charismatic qualities, but who are nonetheless capable of mobilizing some feeling of optimism in some of their patients are likely to receive enough intermittent positive reinforcement to keep them behind their desks. These factors probably account for the proliferation of today's systems and schools of psychotherapy. The pundits of each system have vigorously lauded their own approach while denigrating all others. But claims for the overall superiority of any one system of psychotherapy - including behavior therapy - have not been scientifically verified. Even if one particular brand of therapy was shown to be superior to all others, it still might not cater to those individuals whose rehabilitation called for the use of certain methods practised only by the generally less successful school of therapy. For example, certain people may have such overriding needs to have their dreams interpreted or to sit in an orgone box that only sincere practitioners of these cults will make any headway with them (but not necessarily for reasons ascribed by the practitioner).

In summary, this study substantiates the notion that the technique of desensitization can be effective in reducing public speaking anxiety, although some individuals respond more favorably than others. Nevertheless, many questions remain to be answered. What personality variables, other than those that were the subject of this analysis,

might influence the process of desensitization? Could it be that personality or intellectual variables effect the duration of change? To what extent can children profit from desensitization procedures? Does psychosis prevent psychotherapeutic gain by such measures? Finally, can differential effects of this treatment be attributable to inappropriate diagnosis? As Lazarus (1971) points out, a cherished orientation may incline one to view all clinical problems, if not life itself, as an ubiquitous phobia. Hopefully, future research and practice will illuminate these areas of darkness so that ultimately anyone afflicted with a psychological problem can be optimistic about the outcome of therapy.

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APPENDIX A

Name .....

The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others according to how much you agree or disagree with it. Mark each statement on the answer sheet according to how much you agree or disagree with it.

+1:	I agree a little	-1:	I disagree a little
+2:	I agree on the whole	-2:	I disagree on the whole
+3:	I agree very much	-3:	I disagree very much

-3-2-1+1+2+3 1. The United States and Russia have just about nothing in common.

-3-2-1+1+2+3 2. The highest form of government is democracy and the highest form of democracy is a government run by those who are most intelligent.

-3-2-1+1+2+3 3. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.

-3-2-1+1+2+3 4. It is only natural that a person would have a much better acquaintance with ideas he believes in than ideas he opposes.

-3-2-1+1+2+3 5. Man on his own is a helpless and miserable creature.

-3-2-1+1+2+3 6. Fundamentally, the world we live in is a pretty lonely place.

-3-2-1+1+2+3 7. Most people just don't give a "damn" for others.

-3-2-1+1+2+3 8. I'd like it if I could find someone who would tell me how to solve my personal problems.

-3-2-1+1+2+3 9. It is only natural for a person to be rather fearful of the future.

-3-2-1+1+2+3 10. There is so much to be done and so little time to do it in.

-3-2-1+1+2+3 11. Once I get wound up in a heated discussion I just can't stop.

-3-2-1+1+2+3 12. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

-3-2-1+1+2+3 13. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.

-3-2-1+1+2+3 14. It is better to be a dead hero than to be a live coward.

-3-2-1+1+2+3 15. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.

-3-2-1+1+2+3 16. The main thing in life is for a person to want to do something important.

-3-2-1+1+2+3 17. If given the chance I would do something of great benefit to the world.

-3-2-1+1+2+3 18. In the history of mankin there have probably been just a handful of really great thinkers.

-3-2-1+1+2+3 19. There are a number of people I have come to hate because of the things they stand for.

-3-2-1+1+2+3 20. A man who does not believe in some great cause has not really lived.

-3-2-1+1+2+3 21. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.

-3-2-1+1+2+3 22. Of all the different philosophies which exist in this world there is probably only one which is correct.

-3-2-1+1+2+3 23. A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.

-3-2-1+1+2+3 24. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

-3-2-1+1+2+3 25. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.

-3-2-1+1+2+3 26. In times like these, a person must be pretty selfish if he considers primarily his own happiness.

-3-2-1+1+2+3 27. The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.

-3-2-1+1+2+3 28. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.

-3-2-1+1+2+3 29. A group which tolerates too much differences of opinion among its own members cannot exist for long.

-3-2-1+1+2+3 30. There are two kinds of people in this world: those who are for the truth and those who are against the truth.

-3-2-1+1+2+3 31. My blood boils whenever a person stubbornly refuses to admit he's wrong.

-3-2-1+1+2+3 32. A person who thinks primarily of his own happiness is beneath contempt.

-3-2-1+1+2+3 33. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

-3-2-1+1+2+3 34. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.

-3-2-1+1+2+3 35. It is often desirable to reserve judgement about what's going on until one has had a chance to hear the opinions of those one respects.

-3-2-1+1+2+3 36. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

-3-2-1+1+2+3 37. The present is all too often full of unhappiness. It is only the future that counts.

-3-2-1+1+2+3 38. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."

-3-2-1+1+2+3 39. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.

-3-2-1+1+2+3 40. Most people just don't know what's good for them.

APPENDIX B

TIMED BEHAVIORAL CHECKLIST FOR

PERFORMANCE ANXIETY

Rater _____ Name _____

Date _____ Speech No. _____ I.D. _____

Behavior Observed	Time period								
	1	2	3	4	5	6	7	8	Σ
1. Paces									
2. Sways									
3. Shuffles Feet									
4. Knees Tremble									
5. Extraneous Arm and Hand Movement (swings, scratches, toys, etc.)									
6. Arms Rigid									
7. Hands Restrained (in pockets, behind back, clasped)									
8. Hand Tremors									
9. No Eye Contact									
10. Face Muscles Tense (drawn, tics, grimaces)									
11. Face "Deadpan"									
12. Face Pale									
13. Face Flushed (blushes)									
14. Moistens Lips									
15. Swallows									
16. Clears Throat									
17. Breathes Heavily									
18. Perspires (face, hands, armpits)									
19. Voice Quivers									
20. Speech Blocks or Stammers									
Comments:							Σ	Σ	

APPENDIX C

APPENDIX D

THE WILLOUGHBY SCHEDULE

Instructions:

The questions in this schedule are intended to indicate various emotional personality traits. It is not a test in any sense because there are no right and wrong answers to any of the questions in this schedule.

After each question you will find a row of numbers whose meaning is given below. Indicate your response on the IBM answer sheet.

A1 means "no", "never", "not at all", etc.

B2 means "somewhat", "sometimes", "a little", etc.

C3 means "about as often as not", "an average amount", etc.

D4 means "usually", "a good deal", "rather often", etc.

E5 means "practically always", "entirely", etc.

1.	Do you get stage fright?	A1__B2__C3__D4__E5__
2.	Do you worry over humiliating experiences?	A1__B2__C3__D4__E5__
3.	Are you afraid of falling when you are on a high place?	A1__B2__C3__D4__E5__
4.	Are your feelings easily hurt?	A1__B2__C3__D4__E5__
5.	Do you keep in the background on social occasions?	A1__B2__C3__D4__E5__
6.	Are you happy and sad by turns without knowing why?	A1__B2__C3__D4__E5__
7.	Are you shy?	A1__B2__C3__D4__E5__
8.	Do you day-dream frequently?	A1__B2__C3__D4__E5__
9.	Do you get discouraged easily?	A1__B2__C3__D4__E5__

10.	Do you say things on the spur of the moment and then regret them?	A1__B2__C3__D4__E5__
11.	Do you like to be alone?	A1__B2__C3__D4__E5__
12.	Do you cry easily?	A1__B2__C3__D4__E5__
13.	Does it bother you to have people watch you work even when you do it well?	A1__B2__C3__D4__E5__
14.	Does criticism hurt you badly?	A1__B2__C3__D4__E5__
15.	Do you cross the street to avoid meeting someone?	A1__B2__C3__D4__E5__
16.	At a reception or tea do you avoid meeting the important person present?	A1__B2__C3__D4__E5__
17.	Do you often feel just miserable?	A1__B2__C3__D4__E5__
18.	Do you hesitate to volunteer in a class discussion or debate?	A1__B2__C3__D4__E5__
19.	Are you often lonely?	A1__B2__C3__D4__E5__
20.	Are you self-conscious before superiors?	A1__B2__C3__D4__E5__
21.	Do you lack self-confidence?	A1__B2__C3__D4__E5__
22.	Are you self-conscious about your appearance?	A1__B2__C3__D4__E5__
23.	If you see an accident does something keep you from giving help?	A1__B2__C3__D4__E5__
24.	Do you feel inferior?	A1__B2__C3__D4__E5__
25.	Is it hard to make your mind up until the time for action is past?	A1__B2__C3__D4__E5__

NAME _____ I.D. NO._____

Additional Questions: Answer if relevant.

1. If you suffer from anxiety when speaking in public do you think practice and experience will diminish it so that you will feel comfortable? Yes _____ No_____

2. If there was available treatment would you take advantage of it? Yes_____ No_____

APPENDIX E

Confidential Data Sheet

1. Name _____
2. Age _____
3. Sex _____
4. Marital Status _____

APPENDIX F

Composite Hierarchy

0. You are told that in 3 weeks time you are to present the 10-minute speech.
1. Thinking about the speech at home a week before the presentation.
2. Sitting in an audience while another gives the speech a week before presentation.
3. Writing out the speech 3 days before.
4. Practising alone 2 days before.
5. Thinking about it in bed the night before.
6. Thinking about the speech as you prepare to leave home the morning of the presentation.
7. Walking over to the room on the day of the speech.
8. Entering the room on the day of presentation.
9. Waiting in the audience as another presents.
10. Walking up before the audience.
11. Speaking the opening sentences.

APPENDIX G

TABLE VII

CORRELATIONAL DATA RELATIVE
TO ANXIETY DECREMENT

	Willoughby Decrement	IPAT Decrement	Checklist Decrement
Age	0.32*	0.16	0.32*
Sex	0.17	0.19	0.04
Marital status	0.11	0.30*	-0.03
Dogmatism	-0.04	-0.11	0.04
Extraversion	-0.01	-0.09	0.13
Intelligence	0.44*	0.45*	0.54*
Hypnotic Susceptibility	-0.17	0.04	-0.17
Cognitive Complexity	-0.07	0.02	0.04
Willoughby Decrement	1.00	0.60*	0.70*
IPAT Decrement	0.62*	1.00	0.41*
Checklist Decrement	0.70*	0.41*	1.00

* Significant beyond .05 level

TABLE VIII

ADDITIONAL CORRELATIONAL DATA

	Age	Sex	Marital Status	Dogma-tism	Extra-version	Intelli-gence	Hypnotic Suscepti-bility	Cognitive Complexity
Age	1.00	-0.03	0.37*	-0.36*	-0.02	0.24	-0.47*	0.34*
Sex	-0.03	1.00	-0.06	0.13	-0.12	0.12	-0.02	0.03
Marital status	0.37*	-0.06	1.00	-0.22	-0.29	0.17	-0.14	0.34*
Dogmatism	-0.36*	0.13	-0.22	1.00	-0.06	-0.13	0.15	0.09
Extraversion	-0.02	-0.12	-0.29	-0.06	1.00	0.14	0.02	-0.16
Intelligence	0.24	0.12	0.17	-0.13	0.14	1.00	0.05	-0.17
Hypnotic Susceptibility	-0.47*	-0.02	-0.14	0.15	0.02	0.05	1.00	0.02
Cognitive Complexity	0.34*	0.03	0.34*	0.09	-0.16	-0.17	0.02	1.00

* Significant beyond .05 level