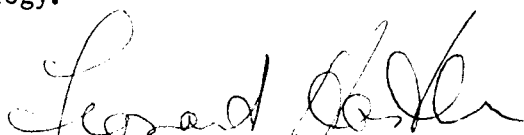


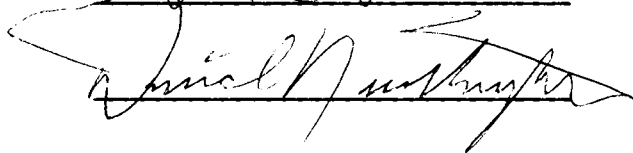
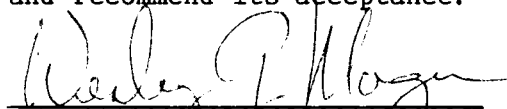
To the Graduate Council:

I am submitting herewith a dissertation written by Thomas M. Plott entitled "An Investigation of the Hypnotic Treatment of Music Performance Anxiety." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.



Leonard Handler, Major Professor

We have read this dissertation
and recommend its acceptance:



Accepted for the Council:



Vice Provost
and Dean of The Graduate School

AN INVESTIGATION OF THE HYPNOTIC TREATMENT
OF MUSIC PERFORMANCE ANXIETY

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Thomas M. Plott

August 1986

ACKNOWLEDGEMENTS

I would like to express my appreciation for the guidance and encouragement provided during the work on this dissertation by my committee members: Len Handler, Bob Wahler, Wes Morgan, and David Northington. I am particularly grateful to Len Handler for his guidance throughout my graduate training and for his stimulating introduction to hypnosis and its therapeutic potential.

I also wish to thank both the students and the faculty members in the University of Tennessee Music Department who participated in the research, particularly David Northington, whose assistance in planning the project and coordinating its activities within the music department was invaluable.

ABSTRACT

This study examines the effectiveness of an individualized hypnotic treatment for music performance anxiety. The subjects were seven undergraduate and graduate piano students. A multiple baseline single subject design was used, with each subject being assigned to one of three treatment schedules. Each schedule included a baseline period, a period of hypnotic relaxation training, the individualized hypnotic treatment, and a follow-up period of no treatment. Two of the three schedules also included an educational treatment, and one included a period of training in self-hypnosis. Several assessment instruments were used in formulating individual treatment strategies. These included the Minnesota Multiphasic Personality Inventory, the Test of Attentional and Interpersonal Style, and the Object Relations Technique.

Dependent measures included a state anxiety self-report measure and faculty ratings of behavioral signs of anxiety and performance quality. These were recorded during performances scheduled at the beginning of the study and after each period of treatment. Responses to treatments were also solicited from subjects informally in cases studied.

Comparison of mean self-reported anxiety following relaxation training with anxiety reported following baseline and educational periods revealed significant reductions. Comparison of mean self-reported anxiety following individualized hypnotic treatment with mean post-relaxation anxiety revealed further significant reductions. At follow-up, anxiety levels remained significantly lower than baseline

levels. Support was provided for these results by faculty ratings of anxiety. No effects on performance quality were found.

Finally, comparison of mean scores on the Test of Attentional and Interpersonal Style with published norms for music students provided support for a view of performance anxiety as symptomatic of a general concern with self-control. It was hypothesized that enhancement of confidence in one's powers of control is a major ingredient of effective hypnotic treatment.

TABLE OF CONTENTS

CHAPTER	PAGE
INTRODUCTION	1
I. LITERATURE REVIEW	4
The Problem	4
Theoretical Perspectives	7
Treatment Approaches	27
II. METHODS AND PROCEDURES	37
Subjects	37
Procedure	38
III. RESULTS	47
Group Results	47
Individual Results	54
TAIS Group Comparison	62
IV. DISCUSSION	64
The Research Questions	64
Summary of Results	65
Limitations of the Study and Methodological Implications	67
Implications for Treatment	73
Further Questions	73
LIST OF REFERENCES	75
APPENDIXES	82
APPENDIX A. MODIFIED <u>STATE-TRAIT ANXIETY INVENTORY</u> FORM Y-1 .	83
APPENDIX B. RATER FORM	84

APPENDIX C. <u>REPORT OF CONFIDENCE AS A PERFORMER SCALE</u>	85
APPENDIX D. HUMAN SUBJECTS CONSENT FORM	86
APPENDIX E. BRIEF TREATMENT DESCRIPTIONS	88
APPENDIX F. TAIS GROUP MEANS AND STANDARD DEVIATIONS	103
VITA	104

LIST OF FIGURES

FIGURE	PAGE
1. Mean raw scores on the modified <u>State-Trait Anxiety Inventory</u> (form Y-1) following each treatment	50
2. Raw scores for Subject #1 on the modified <u>State-Trait Anxiety Inventory</u> (form Y-1) following each treatment . .	55
3. Raw scores for Subject #2 on the modified <u>State-Trait Anxiety Inventory</u> (form Y-1) following each treatment . .	56
4. Raw scores for Subject #3 on the modified <u>State-Trait Anxiety Inventory</u> (form Y-1) following each treatment . .	57
5. Raw scores for Subject #4 on the modified <u>State-Trait Anxiety Inventory</u> (form Y-1) following each treatment . .	58
6. Raw scores for Subject #5 on the modified <u>State-Trait Anxiety Inventory</u> (form Y-1) following each treatment . .	59
7. Raw scores for Subject #6 on the modified <u>State-Trait Anxiety Inventory</u> (form Y-1) following each treatment . .	60
8. Raw scores for Subject #7 on the modified <u>State-Trait Anxiety Inventory</u> (form Y-1) following each treatment . .	61

INTRODUCTION

"Stage fright" or performance anxiety appears to be an experience which is universal among performers in our culture, insofar as the performance represents an opportunity for failure. While most often associated with public speaking or participation in one of the performing arts, the concept has been applied to sexual dysfunction (Masters and Johnson, 1970) and even to insomnia (Ascher and Efran, 1978). Ironically, it has been these "off-stage" performance problems that have generated more interest among researchers than have the more widely recognized public forms. This is not to say that there is anything surprising about research interest in concerns as basic as sleep and sex, but to point out that there has been a rather surprising dearth of investigation regarding the causes and cures of fears associated with stage performance. Public speaking anxiety has been the focus of a number of recent investigations, but these investigations stand virtually alone in the literature.

Probably, it is mostly because participation in public performance is the concern of a relatively small portion of the population that this is the case. Yet we are all entertained by those who venture onto the stage, and from time to time most of us are fortunate enough to have our lives enriched by the inspired performance of a gifted artist. And just as surely, we have all been deprived of such experiences when promising performers have been unable to deal with their fears. As Fogle (1982) has pointed out, there is a tendency among non-performers to trivialize stage fright. It is often thought to affect only those

lacking in experience or talent. Its capacity for disrupting private performing and efficient practicing is frequently overlooked. There has also been something of a veil of silence surrounding the topic among performers themselves. It has often been considered shameful--the sign of a grievous personal inadequacy.

Over the years a number of theorists, particularly many prominent figures in the psychoanalytic literature, have dealt briefly with the subject. Most of what has been written, however, has been produced by performers or teachers of performance. Teachers, in particular, have long recognized stage fright as probably the most destructive element in the performing arts. Within the field of music, Kato Havas (1973), a violinist and teacher, has made this point most emphatically.

This study will focus on anxiety associated with musical performance. Its primary goal will be to determine the efficacy of hypnotic treatment of music performance anxiety, a treatment suggested by case study material and by the successful use of hypnosis in treating related performance problems. The use of several psychological assessment instruments in producing individualized treatment strategies will also provide, along with interview data, some descriptive material and the opportunity for some limited hypothesis testing. The phenomenology of performance anxiety has been described at length by a number of musicians, but description of the relationships between personality characteristics, psychodynamic issues, performance history, etc. and the individual's characteristic reaction to a performance situation is largely lacking in the literature. Although the scope of the study and its main purpose

preclude an extensive effort in this area, some such relationships are suggested that may warrant further investigation.

CHAPTER I

LITERATURE REVIEW

The Problem

Performance anxiety appears to be a universal experience for those who perform in front of an audience. Its severity ranges from the momentary, easily concealed discomfort the performer feels immediately prior to setting foot on stage to a condition of such severity that a promising career may be destroyed.

Physiologically, the manifestations are the same as those of a fright reaction. Common symptoms include: increased heart rate, excessive perspiration, various gastro-intestinal disturbances, dry throat, excessive yawning, cold hands or sweaty hands, and uncontrollable trembling. Gabbard has pointed out that one of the most remarkable features of performance anxiety is that "it is experienced despite extensive preparation for the act of appearing before an audience" (1979, p. 383). It is an anticipatory response, which for many performers, vanishes entirely once the actual performance has begun. Knight and Borden (1979) have found that irrespective of individual differences in amount of anxiety as psychometrically assessed, the period immediately preceding performance is characterized by accelerating autonomic responsiveness, the primary indicator of severity of physiological reaction being the temporal parameter, or the time remaining until the beginning of the performance.

While the physiological symptoms are the most common and the most

noticeable in the majority of performance situations, in music performance in particular the problem extends well beyond these manifestations of discomfort. While acknowledging that music performance anxiety is a variant of the popular condition known as stage fright, Fogle (1982) has pointed out that the connotations of that term, when applied to music performance, are misleading and trivializing. For example, although anxiety is typically greater when performers are playing in public, the tendency of performance anxiety to creep into lessons or private playing and practicing is a significant problem as well. The performer may, in effect, become his own audience and have his performance suffer in exactly the same ways, although to a lesser extent, as in public performance.

The experience of performance anxiety begins, of course, well before the onset of observable physiological signs. Kaplan (1969) has discussed early signs which are evident long before performance. The individual may become irritable in his interpersonal relations. Obsessional fantasies of disasters which could keep him from performing may preoccupy him. He may even develop ideas which resemble paranoid delusions in which malevolent motives are attributed to the audience or important members of the audience. Kaplan, Gabbard, and Fogle also speak of sensations or ideas which develop moments before performance, when autonomic arousal is beginning to take hold. Kaplan speaks of "blocking" and "depersonalization" symptomatology. Blocking is the sensation of losing all control over the functions that one has diligently rehearsed--of losing control over expression. Kaplan describes depersonalization as "a split between a functioning and an

observing self. . . . The observing self perceives the functioning self as off at a distance operating mechanically before an audience . . . (1969, p. 65). Depersonalization and, to a lesser extent, blocking increase drastically as foreign physiological reactions set in, as the observing self is provided with more and more to observe.

The primary result of this sort of perceptual distortion is a reversal of the process the performer has gone through in learning to perform. The learning of music performance skills, as with other complex perceptual motor skills, involves progressively higher orders of organization. Highly practiced specific motor sequences become more automatic, requiring less attention. Attention and motivation are progressively freed from this narrow focus, rendering them more available for the demands of style and expression, or broader aspects of technique. As blocking takes place, muscles become tense, and smooth precise movement becomes impossible. As the performer becomes more aware of mechanics, the performance becomes more mechanical. The performer becomes incapable of accepting the paradox that increasingly complex performance is possible only under conditions of less voluntary control.

At the same time, fear of failure increases the dread with which the performer feels himself becoming more like a robot and less like a musician. He begins to worry about difficult passages, to try to think his way through the piece as a safeguard against the feared memory lapse, and to pay more and more attention to the mistakes which inevitably occur. In summary Fogle (1982) states:

Performance anxiety thus tends to de-automatize performance, as the

player reverts to a more self-conscious, laborious style of playing: defensive playing as opposed to creative playing. . . . If the performer attributes some performance decrement to his/her nervousness or stage fright, this insight will not necessarily be of much help. Deliberate (and anxious) efforts to reduce tension before, much less during a concert often fail, and they further deflect the victim's effort and attention from any larger musical values. (p. 369)

Brief mention should be made of the existence of a variety of fears which typically accompany performance anxiety, fears which are often highly specific to a particular performance situation or to the instrument being played. For example, Havas (1973), after years of teaching and studying violin students, has stated that the most common, most shame provoking fear of violinists is that of actually dropping the violin. It is a problem which she claims is at the root of other performance problems, as well. She even suggests that many of those who have traded the violin for the viola have done so out of the mistaken hope that it might be easier to handle. The point is that each situation has the capacity to evoke specific fears which can exacerbate as well as result from the more general problems which have already been discussed.

Theoretical Perspectives

Theories dealing directly with the problems of performance anxiety or which have been applied to it can be divided into roughly four categories: Cultural/Social Learning, Familial, Intrapsychic/Interpersonal, and Cognitive/Attentional. I say roughly, because the categories represent areas of emphasis rather than the exclusion of other factors. Before discussing the important theories I should also make note of my omission of physiological theories. This is not to

deny that a strong case can be argued for this and other anxiety manifestations being holistic phenomena, related to physiological dysfunction as well as psychological dysfunction. The omission is due rather to an absence in the literature of theories based primarily on physiological characteristics, as well as to a lack of evidence that individual physiological differences are meaningfully connected with the experiencing of performance anxiety. In the interchange between the experiencing of physical symptoms, the psychological reaction to them, the resulting physiological exacerbation, etc. it seems likely that differences in physiologic response would have an effect. Descriptions of such effect are currently lacking, however.

Emphasis on a view of performance anxiety and particularly music performance anxiety as largely a cultural or socially learned phenomenon has been provided by a number of writers, most notably Kato Havas (1973). Havas has looked closely at methods of music training in western culture and has pointed to factors which, if they do not create anxiety, at least enhance it, particularly in young performers. She cites early pressure to perform before a critical audience and overriding concern with accuracy of performance which condition fear of the performance situation. Earlier Franz Liszt ([1811-1886], 1926) had decried the over-emphasis on technical virtuosity in the concert world in making the point that artistic powers of communication are not thusly acquired but are exercised only by "divine right." It was to this that Havas (1973) was referring when she wrote:

The trouble is, that because of the demands of success from early childhood onward, the "divine right" seldom has a chance to develop, let alone reach fulfillment. Beset with accumulated

technical difficulties, examinations, international competitions, the positive side of music making, the over-riding desire to communicate, soon gives way to anxieties and fears. "Will I succeed at the audition?" "Will the great man teach me?" "Will I win the first prize and thus become known overnight?" It is almost inevitable that by the time a student reaches maturity, the importance and constant evaluation of his own self become the dominant factors in his career--and stop him from fulfilling his potential of the "right divine." (p. 9)

The whole concert world is so impregnated with continuous self-justification and competitive behavior patterns that it affects the audience as well. We all know that the audience has been conditioned, through generations, to criticize and judge, much more than to enjoy. Heifetz himself was convinced that at every performance he gave, two thousand nine hundred ninety-nine people out of three thousand had come to hear him play a wrong note.

In contrast to the way instrumental performance is typically taught in our society, the way in which the gypsy learns to play the violin and the way he understands what he is doing when he plays has often been described. Liszt (1926) was probably the first to speak of the contrasting approach of the gypsy. Gypsy learning was also mentioned by Leonard Deutsch (1950), a piano teacher who also happened to have been a student of Alfred Adler, and it has recently been discussed by Havas (1973). Gypsies apparently do not suffer at all from stage fright. While what might be termed a naturalistic approach to playing (a comfort with the instrument achieved through years of affectionate association with it) is probably a contributing factor, more important is the effect of the gypsy social system. Havas (1973) has said:

They are not burdened with the responsibilities of our social

system. They do not have to be better than their fellows in order to succeed. In fact, they would be hard pressed to understand why anybody wants to succeed at all. Second, their sole interest is the pleasure of the listeners. They are free from all obligations, except the one and only obligation--to communicate. (p. 12)

Performance anxiety involves focus on the individual's own performance, particularly on cues related to mistakes and to the avoidance of mistakes by performing correctly. Apparently the gypsy couldn't care less.

Empirical work has been done on the effects of different levels of self-consciousness on performance and performance anxiety (Brockner, 1979). Under different conditions, such as prior feedback on performance or none and the presence or absence of a mirror, such factors were found to be significantly related. Again, it is important that, in the gypsy, self-esteem is not tied to quality of performance in the same way, and self-consciousness is practically non-existent.

While it would certainly be misleading to characterize the Individual Psychology of Alfred Adler (1956, 1964) as a "family psychology," it is a theoretical approach which has examined this problem using family structure and early family experience as a starting point. Like the writers who have targeted society and cultural pressures, there is an emphasis here on the competitive nature of society. Such factors as birth order and age difference between siblings become important in examining the ways in which an individual engages in sibling competition or stakes out a territory by emphasizing the development of talents that will give himself a feeling of worth. In order to understand the significance which something like a performing talent has for an individual, one must look beyond the

relationship between birth order and sibling traits, which is unfortunately a common oversimplification of Adler's ideas, and examine the pervasive family climate, the entire configuration of factors within a family.

Out of his early striving within the family, the individual's perception of himself and of self in relation to the world develops. Convictions about who he should be begin to develop, and perceived discrepancies between such convictions and self-image result in inferiority feelings. Actually a distinction is made between inferiority feelings, which Adler considered universal, and the "inferiority complex" which he considered the pathologic result of debilitating discouragement. For Adler, psychological health involved having the courage to take risks necessary in dealing with life's constantly changing challenges, in order to achieve goals in the "social interest" and thereby give meaning to life. At a normal level inferiority feelings provide a mood which encourages the courageous individual to act in accordance with his social interest. Inferiority feelings in Adler's terms, produce a mood, what performers would refer to as an adaptive anxiety level or "being wired" to perform. But for the discouraged individual the tension, which takes hold in a performance situation and produces the characteristic physical symptoms, is seized upon as a means of avoiding or postponing and thus saving face. Adler (1964) describes how some self-esteem can thus be salvaged:

But the goal of overcoming has therewith not at all been lost. All these phenomena (stage fright), by virtue of the social structure of our life, automatically give rise to a feeling of satisfaction

which is usually not understood. They appeal to the sympathy and help of others, or produce a feeling of superiority, thus covering up the inferiority feeling, somewhat in the sense of: "What would I have accomplished, if I were not forced to suffer from this disturbance for which not I, but my heredity, my education, the others are responsible." (p. 55)

What we have characterized above as persons who are failures shows more closely the search to cover up the inferiority feelings with a fictive superiority complex, which is no more than the exploitation of the social interest of others. (p. 56)

Such tactics are necessary largely because the inferiority complex has resulted in the neurotic's preparations for action tending to be contingent upon his perceiving of the situation as more difficult than it actually is. In this way he can maximize his feeling of "striving upward." Adler sees the exaggeration and psychological use of performance anxiety symptoms as distancing behavior, one of several neurotic safeguarding behaviors:

This particular process is demonstrable in all neuroses and psychoses, and has been described by me in detail as the "hesitating attitude." Favourable circumstances permit me now to strengthen this view further. At the same time that one recognizes in the attitude and the devices of the neurotic his demand for a superior flawlessness, one is regularly surprised to find that he interrupts the expected direction of his action at a certain point of his aggression. We are always struck by the fact that the patient at this particular stage is certain to interpose a distance between himself and the expected action or decision Simultaneously with the purposeful setting up of a distance, which frequently also becomes manifest through a bodily expressive movement, the patient secludes himself from the world and reality in various degrees. (1956, pp. 273-274)

The severity of the performance anxiety reaction is directly related, therefore, to amount of discouragement and resulting neurotic defense, with normal experience of tension produced by normal inferiority feelings and greater difficulties produced by the inferiority complex. Not only did Adler see stage fright in this way,

but he also referred to the stage fright reaction as a way of describing other neurotic symptoms.

The subject of performance anxiety has been treated by most of the leading psychoanalytic and object relations theorists. Because different theorists have emphasized different aspects of this form of anxiety, and because this, as much as any other symptom, appears to be overdetermined, a review of these different aspects, rather than a detailed discussion of the ideas of one or two theorists, seems to be in order. Gabbard (1979) has discussed psychoanalytic contributions to the understanding of stage fright in an excellent article from which much of the following discussion is excerpted.

In 1938, writing about the treatment of two musicians, Flugel saw stage fright as being linked to anal eroticism. He compared it with blushing, a symptom which expresses a compromise between punishment and gratification. Bergler (1949) and Fenichel (1954) differed over the role of exhibitionism in stage fright. Bergler saw infantile voyeuristic terror as being at the core of the experience. The performer is seen as trying to shift guilt for his voyeurism onto the audience, but because he also identifies with the audience he also observes himself, producing depersonalization phenomena. Bergler felt that stage fright was related to exhibitionism, but only superficially as a defense against the more basic voyeuristic terror. Fenichel, on the other hand, saw exhibitionism, relating to primitive narcissistic demands for gratification, as the core issue. The exhibitionism is problematic because of oedipal castration anxiety. As the performance situation draws the unconscious exhibitionistic motivation nearer to

the conscious realm, fear that the audience will respond in a punitive, retaliatory way in the manner of the performer's superego sets in. Fenichel, like Adler, emphasizes a specific fright related to feelings of inferiority, but for him, the superiority relates to the feeling of being castrated.

Ferenczi (1950) also attacked the common notion that stage fright was a manifestation of modesty, seeing it rather as embarrassment over excessive narcissistic preoccupation with oneself. He was also aware of the extent to which the performer enters a state of self-observation, and felt that embarrassment over this tendency, and its power to divert his attention from the purpose of the performance, produced anxiety. In 1968, Freundlich dealt directly with the power of competence in ironically increasing performance anxiety. He also linked stage fright to fears that the audience will detect the performer's primitive fantasies of omnipotence and narcissistic exhibitionism. But here, as in Adler's theory, there is also emphasis on the role of infantile rivalry and competitiveness conflict. The performer becomes fearful, not so much of punishment, but of the jealousy of the audience. Good performance, therefore, can come to represent an annihilation of the audience, leading to anxiety over one's destructive, competitive urges.

Kaplan (1969) emphasized both the special nature of the world of the gifted child and the strong likelihood that performance anxiety originates with or can be linked to all levels of psychosexual development. Conflicts at the oral, anal, and phallic levels are all evidenced in performance anxiety in differing degrees with different

individuals. The common recourse to hand to mouth gestures is seen as a way of soothing anxiety over oral conflicts. (The metaphor of "being fed" by the audience is common.) Control issues originating in anal struggles are often prominent, as is the phallic fear that one will not be taken seriously as a powerful adult.

Gabbard (1979) uses this latest point as a jumping-off point in his own discussion of performance anxiety. He feels that, while there is general agreement in the psychoanalytic community that this experience "involves a reactivation of unconscious childhood conflicts" (Gabbard, 1979, p. 385), there has been too much emphasis on specific types of early traumata. The universality of the phenomenon argues for an emphasis on a variety of universal developmental experiences, which are recapitulated, rather than an emphasis on instances of pathological distortion. His analysis, therefore, concentrates on experiences shared by all, genetically linked to the dynamics of shame, scopophilia and exhibitionism, guilt, loss of control, and separation anxiety.

Shame, as a major and universal affective experience in the development of the small child, has been discussed by many analytic writers, most prominently Lewis (1971) and Mayman (1974). The shame dynamic, deriving from childhood shame experience, is often resurrected by the performance situation, where once again one is threatened with being exposed as something different than that which one is trying to portray. And there is experienced again the childhood conflict between the exhilaration of exposure and anxiety over a feared response. A common fantasy of performers is that of walking onstage and discovering that they are naked. Gabbard (1979) notes that one experienced singer

has dealt with her stage fright by imagining that everyone in the audience is naked, thereby achieving a mastery-through-reversal.

Gabbard feels that pleasure in looking at and exhibiting oneself begins very early in the infant's pleasure at looking up at the mother and in being noticed. Later the child begins to show off, demanding that his mother look at him. "As the child's body awareness increases, he begins to glory in the pleasure of romping in the nude, captivating and impressing his audience with his unabashed, gleeful self display" (Gabbard, 1979, p. 381). All of this would be fine were it not for the universal existence of looking and exhibiting taboos in human cultures, the strongest of which center on the parent-child relationship. Again, it is common for the stage fright experience to be worse when one's parents are in the audience. Gabbard writes:

A similar developmental experience is revived in both sexes: The child that dwells in the mind of us all has his exuberant romp in the buff squelched once again by disapproving parents (the audience), who seem to view him as pretending to have something he does not have, and who order a stop to such shameless foolishness. The child feels he has been caught indulging himself in forbidden pleasures and attributing to himself adult traits which he actually lacks. Exhilaration and delight are transformed to shame. (1979, p. 387)

The guilt dynamic is tied to unconscious aggressive impulses, some of which are rooted in exhibitionism and some of which are tied to the need to manipulate and control the audience. Maclean's (1965) descriptions of how monkeys display their genitals provocatively in the faces of other monkeys in order to establish dominance are cited as evidence of the connection between aggression and display of phallic superiority. In the child, oedipal guilt is the result of such display, be it real or imagined:

This castration anxiety was conveyed by a musical comedy performer, who noted that when he walked onstage and began singing he felt as if he was performing under the "guillotine's fatal block," that might drop at any moment and "cut him off" in the middle of his number. (Gabbard, 1979, p. 388)

Guilt over the omnipotent wish to control is prominent, particularly in comedians. For one who achieves pleasure by manipulating, by "setting up" the audience, there may be the fear that the audience might see through the superficial desire to entertain to the underlying aggression.

The fear of being unable to perform because of loss of control over one's body may be the most ubiquitous of performance fears. Here Gabbard (1979) speaks of the recapitulation of both urethral and anal concerns:

The fear of urinating on himself has prompted more than one performer to have a bottle just offstage, into which he could relieve himself just prior to his entrance. The fear of losing sphincter control spreads from urethral to anal concerns. A re-awakening of a developmental experience occurs in which the child proudly parades around in his training pants, flaunting his mastery and control, only to have an "accident" and to endure the shame and humiliation that go along with it. The operation of this dynamic is graphically illustrated in the case of an internationally renowned concert musician who stayed off the concert stage for ten years because of the dread fear that he would accidentally expel flatus during a performance. (p. 388)

Although the emphasis in his latest writing has been on issues of object-relating, i.e., narcissistic issues, Gabbard (1983) is careful to point out that his emphasis on long-neglected narcissistic issues is due largely to that neglect in the literature and not to their being any more important in the pathogenesis of performance anxiety than the concerns which have already been discussed. While he is again dealing with the recapitulation of universal developmental experiences (of a

narcissistic nature) he is also dealing here with a new kind of pathology, applying the ideas of Kohut (1977, 1978), Kernberg (1974), Rinsley (1980), and others to the problem of stage fright. Universal is the separation-individuation process described by Mahler (1975). For every toddler there is the experience, when he first begins to venture away from his mother, of sensing his helplessness and need of the other:

The performer experiences the momentary sensation that he is a child again, a child who is only pretending to be independent and autonomous and who, inwardly, is crying for the omnipotent symbiotic mother to rescue him from the plight in which he has discovered himself through his own self-assertion. Out there in the glare of the footlights, the performer can no longer maintain the fantasy of the rescuing parents. He will stand or fall on his own two feet. (Gabbard, 1979, p. 389)

Dynamically, what is happening is that the rapprochement crisis is being recapitulated. The conflict is between being separate and independent, on the one hand, and being safe and symbiotically gratified on the other. Just as the child fears that the mother will withdraw if he acts independently, the performer experiences anxiety because he perceives the possibility that the audience will reject him. Gabbard (1979) reports that, "even a seasoned and popular performer such as Barbara Streisand has said that each time she performs, she worries that her audience will leave" (p. 390).

In his recent work with performers Gabbard has noticed, in addition to the normal form, a narcissistic form of separation anxiety. A difference in the development of borderline and narcissistic patients that Rinsley (1980) has noted is that, whereas the borderline mother rejects the child's moves toward separation, the narcissist's mother

supports them, but only insofar as the independent action still relates to her. "Achievements are applauded by the mother, but only achievements that confirm the child's position as a narcissistic extension of the mother" (Gabbard, 1983, p. 438). The child learns that he must follow a script that the mother has provided. The result in the performer is anxiety manifested in obsession with giving a perfect performance with no mistakes of any kind. This fear has been given popular expression in the words of John Lennon: "What would you do if I sang out of tune? Would you stand up and walk out on me.?"

Gabbard has also compared the performance situation with the transference situation, in terms of the performer's relationship to the audience. Referring to Kohut's (1977) distinction between a mirroring and idealizing process in narcissistic development, where, in the former the child replaces omnipotent perfection with a grandiose self-image and in the latter the perfection is given over to an idealized parental image, he compares the performer's relationship with the audience to the two distinctive kinds of transference. In the grandiose transference, the audience is the mirror which reflects the frantic attempts to "capture the gleam in the mother's eye." Such individuals "are impelled to perform and attract the attention of others, whose confirming and approving responses will provide sustenance for their famished selves" (Gabbard, 1983, p. 429). They are what Kohut and Wolf (1978) have described as "mirror-hungry personalities." Others see their performance as a "blissful merger with the idealized parental image, i.e., the audience" (Gabbard, 1983,

p. 429). Descriptions of periods of being on stage as like fusion with the audience are common.

Finally, as with others who have dealt at length with the narcissistic personality, Gabbard (1983) speaks not only of debilitating effects but of the creative achievement that is also made possible by the need to compensate for the self or part of the self that is missing. It is a point which must be considered in contemplating treatment strategies for such individuals. Gabbard concludes his latest article by saying:

Although it is a potentially disabling problem stage fright adds a unique dimension to the vitality of live performance. It is emblematic of the electric interaction between the performer and the audience that makes the theater a place of magic As the performer balances on the razor's edge of the audience's ambivalent empathy for him, a sense of dangerous excitement is created. This interactional tension makes live performance a unique medium that can never be replaced by film or recording. As one performer put it, "It creates a feeling of delicious dread, a mixture of horror and anticipation." (1983, p. 440)

As Adler (1964) has noted, and as Gabbard (1983) has so eloquently observed, anxiety or, more accurately, arousal must be present for optimum performance. This principle was established in 1908 by Yerkes and Dodson who described the relationship between arousal and performance as an "inverted U." Following in that tradition have been a number of individuals who, while not attempting comprehensive theoretical explanations of stage fright phenomena, have made significant contributions to an understanding of the problem through their work in the fields of cognitive/attentional and motivational psychology, and motor learning and control. In general, although these different perspectives have produced concepts and

relationships which are quite different from those previously discussed, there is little that contradicts existing theory. Clarification and augmentation of theory and further support for the notion of over-determination have been the usual result.

For example, if one looks at the process by which a performer learns a piece of music, particularly with respect to attentional requirements, and how different that is from the performance process, different kinds of ideas about how difficulty might arise are generated. Schmidt (1982) has described the learning of a performance task as a process in which stimuli (musical notes, for example) are identified, responses are selected, and finally responses are programmed so that an abstract idea is converted into muscular action. To extend his process analysis to piano playing, a piece of music cannot be sight-read perfectly because of both structural and capacity interference. Structural interference refers to the overloading of sense organs, e.g., the inability of the visual process to attend to all of the notes, dynamic markings, fingerings, etc. Capacity interference refers to competition for a limited amount of processing capacity. Learning a piece means making more elements automatic, rendering interference less problematic.

The performance of a well-learned piece becomes a continual activation of motor programs--abstract representations that result in the production of coordinated movement sequences in the absence of feedback. That a motor program, once initiated, cannot be modified unless an attention shift de-automatizes it, can be attested to by any pianist who has had to struggle with de-bugging a well-but

incorrectly-learned trill. Learning to play a piece involves successive attentional shifts, away from feedback as to the correctness of automated programs and toward error computation and correction of that which remains to be learned. Otherwise new learning does not take place, and interference with program functioning occurs. The experienced performer is well aware that practicing a piece as if trying to perfect it and practicing it in preparation for performance are very different tasks. If one continues to attend to measures of correctness, then de-automation results, and playing becomes mechanical. Stage fright can therefore succeed in producing mechanical, unmusical playing merely by heightening awareness of what one is already accustomed to attending to if one is accustomed to practicing inappropriately, although it may encourage attentional shifting, as well.

This analysis also suggests a different interpretation of the observed absence of stage fright in gypsies. Although the performance error may be less upsetting to the gypsy, attention to the elimination of errors must be involved in his learning to perform, and concern for the beauty of the music and his communication of it must warrant concern with minimizing errors. This much he must share with his classically trained counterparts. It is likely that some gypsy performers attend inappropriately as well. The gypsy learns to play through a very different process, however. Rather than starting with small elements and gradually molding them into a seamless automatic performance, he learns largely by gradually contributing more and more to the performance of a band or, as a soloist, by progressively

elaborating on a simple tune. Certainly when one looks at improvisation, one is looking at a very different process, one in which fluidity is not produced by automatic reproduction of a sequence of motor programs but by the more spontaneous production of internalized programs as evoked by a simple motif. This, in turn, suggests a further difference. The improviser seemingly must be absorbed in the complexity of his task in much the same way as is the sight reader. There remains little room for attention to audience, outcome, etc. The performer who has learned a piece of music must, on the other hand, find appropriate objects for his attention so that the extent to which his performance is automatic will not be interfered with.

Nideffer (1976) has studied attentional style and how it affects performances of different types, including music performance (1978). He has hypothesized four styles (broad internal, narrow internal, broad external, and narrow external) and has determined that individuals vary according to stylistic preference and ease of shifting from one style to another as required by performance demands. Where learning a piece of music requires external focus of varying widths, performance of a memorized piece requires narrow internal focus. Nideffer feels that the inverted U concept of the relationship between arousal and performance can now be broadened. As anxiety and therefore arousal increases, width of attention narrows. In conditions requiring narrow focus, anxiety can improve performance until a level is reached where focus has narrowed too much.

It is important that in Nideffer's analysis he uses anxiety and arousal synonymously. Most anxiety theorists, however, would argue

that it is important to distinguish between the two (Epstein, 1972; McReynolds, 1976). A person can be anxious and not aroused and vice versa. Arousal can be seen as a physiological reaction to a crisis, a state of heightened readiness to act. Anxiety refers to awareness of crisis and, relative to perceptions of imminence, triggers arousal. In summarizing a number of studies of induced anxiety, McReynolds (1976) has proposed the following relationship: The arousal system responds positively when anxiety increases, and the response is greater the more sudden the increase in anxiety. Once the level of anxiety has reached an equilibrium, however, arousal level tends to return to normal.

The relative independence of anxiety and arousal has often been overlooked because they do so often parallel each other. The performer who speaks of being "wired" to perform is most likely referring to the feeling of readiness, the energizing effects of arousal mechanisms, rather than the triggering anxiety. Hamann (1982) found that performers with many years of formal training in music performance performed at their best under conditions of public performance, thus supporting a view long held by many musicians. Drive theory and its derivatives such as Speilberger's Trait-State Theory (1971) have been used to explain such findings. Here the superior performance of the highly trained is explained in terms of predominance of correct responses over error tendencies:

Assuming that elevations in A-State reflect drive level, drive theory delineates the complex effects of differences in A-State on performance. According to the theory, the effects of A-State on performance in a learning task will depend upon the relative strengths of the correct habits (responses) and the

competing error tendencies evoked by the task. On simple tasks, in which correct responses are stronger than error tendencies, high A-State would be expected to facilitate performance. On complex or difficult tasks, in which error tendencies are stronger than correct responses, it would be anticipated that high A-State would interfere with performance, at least in the initial stages of learning. (Spielberger, 1971, p. 274)

But there are problems with matching such a theory to the findings. Certainly inexperienced performers can learn simple pieces just as thoroughly, in terms of note accuracy at least, as can a conservatory veteran. With the same preponderance of correct responses vis-a-vis error tendencies, why should anxiety produce different effects? The theory speaks of "initial stages of learning," but it is referring to the learning of a motor task, not preparation for a career. Here again no distinction is made between anxiety and arousal. If one adopts a distinction such as that suggested by McReynolds, then one possibility suggested by Hamann's findings is that under conditions of arousal, which may even be controlled after years of practice, the experienced performer does better than his inexperienced counterpart because his anxiety level—his sense of crisis—is lower. Perhaps in the veteran performer, anxiety remains more as an arousal induction device he has learned to use, a "delicious dread" that he willingly tastes rather than an intrusive dread forced upon him. Perhaps the mixture of horror and anticipation of which Gabbard speaks contains more anticipation than horror for the veteran—enough risk to keep live performance interesting, but overall an expectation of success based on experience.

Some support for this notion can be found in a study by Kemp (1981). He administered Cattell's 16 Personality Factor Questionnaire

and High School Personality Questionnaire to 1386 secondary school musicians, conservatory and university musicians, and professional musicians. On the basis of these questionnaires, professional musicians appear more "forthright" and "undisciplined" than their younger counterparts who scored higher or similar to their non-musician counterparts on "shrewdness" and "control." While this interpretation of Kemp's findings is a liberal one, it does suggest that the more experienced performer is less concerned with the need to conform to someone else's standards of perfection and is more interested in creating something that is his own. Excitement over anticipated opportunity rather than the dread of not measuring up seems a likely result. This is also consistent with the psychoanalytic view that asserting oneself on stage effects a reactivation of separation-individuation anxiety. Perhaps experience has also taught the more mature performer that doing his thing will not result in the withdrawal of approval and love by the maternal object/audience.

The argument that the universality of stage fright implicates universal developmental experiences which are reactivated by one's venturing onto the stage is persuasive. This does not deny that, in Gabbard's words, "the various developmental experiences are differentially weighted in each individual's stage fright reaction depending on the vicissitudes of his early childhood experience" (1979, p. 391). Nor does it conflict with suggestions that later familial experiences, training methods, cultural expectations, etc. are important factors as well. Indeed, many factors are likely to be relevant in each case, and each case is likely to represent a unique

combination of differentially weighted factors. This suggests that treatment must be tailored to the individual performer to be most effective. It is also suggested that each case can be located on a continuum from normal to pathological, with more severe cases--particularly those involving the emergence of anxiety later in one's career--more closely associated with the reactivation of developmental concerns, and therefore more likely to require a more extensive treatment than the more common case of the anxious novice for whom a modified practice regimen might be sufficient.

Treatment Approaches

In this section, research on the effectiveness of different approaches to treating stage fright will be reviewed. There are relatively few studies dealing specifically with music performance, and, therefore, a sample of studies dealing with related forms of stage fright, particularly as experienced by public speakers and athletes, will be included.

Beta blockade. Recent studies have established the effectiveness of beta-blocking drugs such as propranolol and oxprenolol in attenuating the somatic effects associated with stage fright in musicians (Brantigan, Joseph, and Brantigan, 1978, 1979, 1982; James, Pearson, Griffith, and Newbury, 1977; James, Pearson, Griffith, Newbury, and Taylor, 1978). By eliminating these physical impediments, beta-blocking drugs have also been found to increase the quality of performance as judged by experienced critics (Brantigan, Joseph, and Brantigan, 1982). This last study also demonstrated that beta-

stimulating drugs can, when administered with external cues, produce all of the symptoms associated with stage fright. It has been known for some time that the administration of adrenalin can cause anxiety. Apparently, beta-blocking drugs have the opposite effect.

Unfortunately, the use of beta-blockers can prove lethal for individuals with asthma or certain heart diseases. Fatigue and depression have been produced in some individuals. There have been reports of nightmares and delusions in rare cases (Sobel, 1979). Concern has also been expressed regarding possible effects of long-term use. Despite the contraindications, use of propranolol, in particular, has apparently increased rapidly among musicians. One member of a regional orchestra has guessed that half of its members use propranolol regularly (S. Jackson, personal communication, June, 1983).

Desensitization strategies and derivatives. The similarity of stage fright to phobia prompted a number of early studies of the efficacy of applying desensitization procedures to performance anxieties, particularly those associated with academic or public speaking performance. In general, systematic desensitization has been shown to be effective, but in comparisons with other treatments it has often been less effective, and its effectiveness has been more impressive when assessed through measures of anxiety rather than through performance evaluations.

Kondas (1967) was one of the first to study the effects of systematic desensitization on stage fright. Treatment of children and university students produced positive results similar to those reported

in earlier studies of the treatment of phobias. Spielberger, Anton, and Bedell (1976) reviewed the literature and found that the reduction of test anxiety was reported in 29 of 33 similar investigations of systematic desensitization. In studies they conducted, however, no improvement in academic achievement or on performance of cognitive-intellectual tasks was associated with reductions in test anxiety. On the basis of their work and review of previous studies, they concluded that the "successful reduction of anxiety in evaluative situations is not sufficient to bring about improvement in performance" (p. 340).

Bedell also found in his study that relaxation training alone was as effective in reducing test anxiety as was systematic desensitization.

As a result of such findings, there is a recent trend toward the use of self-control methods aimed at producing more widely applicable coping skills. This is in contrast with traditional systematic desensitization which represents a circumscribed deconditioning model (Barrios and Shigetomi, 1979). Lent, Russell, and Zamostny (1981) compared the effectiveness of two such treatment strategies and a placebo. Both "cue-controlled relaxation," which incorporates elements of cue-controlled relaxation within a desensitization format, and "rational restructuring," which combines cognitive techniques with desensitization features, were found to be effective in the treatment of speech anxiety. Again though, differences were not found on behavioral measures.

Stress inoculation training has been described by one of its originators as a package of stress management techniques involving, in addition to systematic rehearsal of stress coping skills, an

educational phase, as well as practice in applying skills in stressful situations (Jaremko, 1980). Although designed to be used as a package, the relative effectiveness of its components in treating speech anxiety has been investigated (Jaremko, Hadfield, and Walker, 1980).

Comparison groups received education only, skills only, and the combination of both. The education only group was the only one to improve significantly on self-reported anxiety. Both the education only and the combination group improved on self-reported self-efficacy as a speaker. Although desensitization, relaxation, and other coping skills may be effective, relative inefficiency when used alone has resulted in their increasing use as part of a package.

In the first comparative study in which systematic desensitization was used to treat music performance anxiety, Lund (1972) found that, while insight therapy, systematic desensitization, and relaxation with application were all effective in reducing anxiety and improving performance, only the group participating in insight therapy was able to maintain improved performance from post-test to follow-up. Wardle (1975) and Appel (1976) found systematic desensitization effective in treating music performance anxiety, but neither included follow-up measures. Wardle also found insight-relaxation procedures to be roughly equal to systematic desensitization in effectiveness. Just as much improvement in performance, as evaluated by a panel of experts, was found in the group which received no training as was found in either treatment group, however.

Meditation/relaxation and exercise. Little has been added to Bedell's finding that relaxation training alone was as effective as systematic desensitization. Kirsch and Henry (1979) assigned thirty-eight speech-anxious students to systematic desensitization, desensitization with meditation replacing progressive relaxation, meditation only, and no treatment conditions. The three treatments were found to be equally effective and more effective than no treatment. The effects of exercise have also been studied and have been found to be similar to the effects of relaxation or meditation with respect to anxiety reduction (Bahrke and Morgan, 1978; Bahrke, 1979). This finding is interesting in that it points again to the independence of anxiety and arousal. Exercise produces arousal and relaxation/meditation reduces it, yet both are equally effective in reducing anxiety. There are obvious restrictions on a musician's availability for strenuous exercise before a performance, and thus far there are no reports of attempted exercise treatment for music performance anxiety.

Cognitive/attentional training. Based in great part on Wolfe's (1976) research, Nideffer and Hessler (1978) developed a treatment program incorporating relaxation and attentional training, a program they have used successfully in treating the music performance anxiety of Eastman Conservatory students. In their program, a training tape is made for each individual based on historical data obtained from an initial interview. The tape combines breathing exercises with suggestions for redirecting concentration during imagined failure

situations. Students are instructed to listen to the tape twice a day, usually for a period of 1 to 2 weeks. This is followed by two feedback/discussion sessions, the second of which is timed so that it occurs within 24 hours of exposure to an actual performance situation. It was found that individuals could gain control over tension levels very quickly and that supplementation of the two week, four session program with additional relaxation training was rarely needed.

Kendrick, Craig, Lawson, and Davidson (1982) compared the effectiveness of a cognitively based treatment program with that of a behavior rehearsal program in treating 53 performance-anxious pianists. Both behavior rehearsal and attentional training were found to be more effective than no training in reducing behavioral signs of anxiety, in improving the quality of playing, and in reducing self-reported anxiety at follow-up. Attentional training, however, was found to be superior to behavior rehearsal in reducing behavioral manifestations of anxiety and in enhancing expectations of personal efficacy.

Hypnosis. Cases have been reported where stage fright has been treated successfully using hypnosis employing both relaxation and cognitive/attentional approaches. Frankel (1976) treated a 35 year old singer by instructing her in how to induce trance herself and how to practice a relaxation exercise while in trance. She was directed to practice this exercise for ten minutes twice daily and in anticipation of upcoming performances. In this case, relaxation was a primary object, in part because the singer reported that she could hit certain high notes only when sufficiently relaxed. The subject reported being

very satisfied with both the feeling of mastery she achieved and the results of a subsequent solo performance.

Mordey (1965) also treated a 35 year old woman who was a singer. In this case, treatment involved having the subject visualize, while in trance, an ideal performer performing the role which was of immediate concern to her. It was then suggested that the subject was that ideal performer, performing happily and full of confidence. The posthypnotic suggestion of a perfect performance was given, hypnodrama was used to have the subject go over the perfect performance in her mind, and finally waking state visualizations were practiced several times daily. Success was reported based on the subject's report and observations of her performance by other people. In this case appropriate behavior was facilitated without any attempt to alleviate anxiety directly.

Although the effectiveness of various hypnotic techniques in treating different forms of anxiety such as anxiety neurosis (Tosi, Howard, and Gwynne, 1982); phobia (O'brien, Cooley, Ciotte, and Henninger, 1981); test anxiety (Boutin, 1978); and interpersonal anxiety (Stanton, 1978) has been investigated with positive results, as yet there have been no systematic investigations of the use of hypnosis in treating stage fright. Naruse (1965) has presented a collection of case studies in which champion Japanese athletes in different sports were treated for stage fright using individualized hypnotic approaches in response to difficulties experienced during the 1960 olympic games in Rome. This, along with the two previously mentioned case studies, constitutes the hypnotic treatment of stage fright literature.

Both the case study literature and evidence from investigation of

hypnotic effects suggest that systematic study in this area might be worthwhile. Based on his own investigations and a number of similar studies, Edmonston (1979) has concluded that neutral hypnosis and relaxation are, in fact, synonymous. Therefore, any hypnotic approach involves relaxation, whether anxiety is attacked directly or not. Where other strategies combine relaxation training with cognitive refocusing or attentional training, trance represents a natural combination. Treatment appears to be most successful when it enables the individual to gain control over both mental and physical processes. This can be accomplished by substituting a different process or by learning to control and take advantage of one which already occurs. In Nideffer's (1976) view, the person in acute stage fright panic is probably effectively in trance. Crisis situations can have the effect of an induction. The person's mental state at such a time is characterized by the same narrowing of focus characteristic of any trance, and it is the narrow focus on one's fear which renders control over it so problematic.

But of course trance can also be employed to one's advantage. Performers have often described the periods of peak concentration which produce the best results on stage or in practice as trance-like. The performer who is undisturbed by a loud noise in an auditorium while he is playing is probably in trance. If this naturally occurring state is one with which performers have so much familiarity and is one which offers so much potential for positive as well as negative effect on performance, why not aim for increased mastery of that state rather than substituting for it? Stated another way, hypnotic trance has an

advantage over states achieved through relaxation training because relaxation is only one of its potentials. Trance can also be used to produce arousal and, arguably, control over arousal level. Garver (1977) has discussed cases in which athletes have been trained to control their arousal levels by learning to associate level of arousal with numbers 1 to 10. Using trance, the individual learns to produce an association much as one does in learning to match vocal pitch to a note of music. In the same way that one learns to tune a pitch to compensate for a perceived error, one learns to adjust arousal to what one feels is an optimum level. In Garver's system, the individual repeats numbers, gradually changing the number, and with the change experiencing his level of arousal changing (e.g., "seven, seven, seven, six, six, six, five, five, five").

If trance can be utilized in the control of arousal level, then it follows that trance should be useful in maximizing performance. Sakata and Anderson (1970) investigated performance on a variety of tasks under the following conditions: (1) posthypnotic suggestion, (2) waking suggestion, and (3) hypnosis and no suggestion. Results led them to conclude that posthypnotic suggestions appear to be effective in enhancing performance on tasks emphasizing emotional control, alertness, concentration, and attention.

Where relaxation is a primary objective such as in the singer who wanted to relax so that she could hit high notes, hypnosis has also produced superior results when compared with other relaxation methods. Hurley (1980) pretested 60 college students on the IPAT Anxiety Scales. Covariance analyses of post-test results indicated that hypnosis was a

more effective self-regulatory technique for reducing anxiety levels when compared to biofeedback or trophotropic response procedures.

Finally, there is evidence that there is a positive relationship between creativity and hypnotic susceptibility (Perry, Wilder, and Appignanesi, 1973). If, in Nideffer's analysis, susceptibility to trance and susceptibility to stage fright are related, it seems only fair that artists, to the extent that they are creative, should prove available to hypnotic treatment. The effect of hypnosis on creativity has also been investigated. Mellgren (1976) had 17 artists produce sketches. After an hypnosis session during which they were informed that after awakening they would feel calmer, more confident, and inspired, they were asked to make new sketches of a similar nature. Improvement was significant for the group as judged by three established artists. Perhaps the process of interpreting a piece of music could be facilitated similarly. This process takes place largely in the early stages of preparation for a performance. Unlike systematic desensitization or other strategies which focus exclusively on the situation which produces the anxiety, hypnotic treatment strategies, by virtue of their capacity for enhancing concentration on appropriate objects of attention, are seen as having the potential to enhance learning and the use of practice time as well.

CHAPTER II

METHODS AND PROCEDURES

Subjects

The subjects in this study were students of piano performance at the University of Tennessee, Knoxville. They were recruited through discussion of the project and distribution of the consent form in a meeting the investigator had with all piano performance students at the beginning of the school year. The project had previously been discussed with the piano faculty and, in some cases, a student's decision to volunteer for the study was influenced by a teacher's recommendation of it.

Ten subjects were selected for the study based on severity of performance anxiety and hypnotizability. One subject dropped out before the study began because of time constraints. Another continued only through the initial screening phase, for the same reason. And one other subject was dropped from the study at the end of the winter quarter because of insufficient attendance. A fourth subject, for whom results are reported, completed all but the last two phases of the study.

Of the seven subjects, there were four females and three males. Ages ranged from 20 to 34, and total years of piano study ranged from 11 to 18. One subject had begun piano study at age 14, the others at age 8 or 9. Three of the subjects were undergraduates, and the remainder were either working on masters degrees or had already

received them. All subjects expressed plans to teach piano. In addition, five planned to embark upon careers as soloists, and three planned involvement in accompaniment and ensemble performance as well.

Severity of performance anxiety, as measured by the Report of Confidence as a Performer Scale (Appel, 1974) ranged from 11 to 23 with a mean of 16.3. This is an instrument which was derived from Paul's (1966) instrument, Personal Report of Confidence as a Speaker. Like the original, it contains 30 true-false items (see Appendix C). The subject's score is the total of true responses. For the purposes of this study, a score of 10 was chosen as a cutoff. Scores above 10 are considered to reflect at least moderately severe performance anxiety. This mean of 16.3 is consistent with the pretest mean of 15.93 for the 30 subjects who volunteered for Appel's (1974) study because of piano performance anxiety.

During screening, all subjects were easily hypnotized using a standard eye fixation technique. All achieved at least a medium depth of trance, as characterized by partial amnesia and the following of simple post-hypnotic suggestions. Three achieved deep trance, as characterized by positive visual hallucinations and the ability to open one's eyes without affecting trance.

Procedure

After screening and selection for the study, subjects were asked to participate in the first of six performance situations. In each performance situation, each subject was required to play a memorized piece or part of a piece of music of from 3 to 5 minutes in length

before an audience made up of the other subjects, other piano students, a panel of piano teachers from the university, and the investigator. Performances took place on the stage of the large recital hall in the music building using the grand piano used for all solo recitals. All members of the audience were seated as they would be for a recital, with the exception of the faculty panel and the investigator who were seated in desks approximately 8 to 10 feet upstage of the keyboard. There were 3 members of the panel. Unavoidable absences of panel members produced the only variation in the performance situation. This meant that on some occasions four people were on stage with the performer, and on other occasions there were two or three.

Immediately after performing, each subject completed the state portion of the State-Trait Anxiety Inventory by Spielberger, Gorsuch, and Lushene (1970). This was augmented by six items which are similar in form, but which are more specific to musical performance (Neftel, Adler, Kappeli, Rossi, Dolder, Kaser, Bruggesser, and Vorkauf, 1982) (See Appendix A). Although subjects completed these self-reports after they performed, they were instructed to respond in terms of how they felt immediately before and as they began to play. This procedure was decided upon so that the act of filling out a form would not interfere with preparation for performance and therefore risk affecting anxiety level.

Each performance was also rated by the members of the faculty panel. The first section of their rating form (see Appendix B) contains items selected by Kendrick (1979) from Paul's (1966) Timed Behaviors Checklist for Performance Anxiety, items which provide a

means of rating behavioral manifestations of anxiety. Raters were instructed to respond to these items on the basis of the performer's behavior immediately preceding and at the beginning of the performance. The second section of the rating form contains items (Craske and Craig, 1984) which provide a means of rating quality of performance. Raters were instructed to respond to these items on the basis of the first three minutes of each performance.

A multiple baseline experimental design in which all subjects experienced four treatment conditions was employed. Order of treatment varied depending upon assignment to one of three treatment schedules:

TREATMENT SCHEDULES

Control	Hypnotic relaxation treatment	Individualized hypnotic treatment	Self-hypnosis training	No treatment
Control	Educational period	Hypnotic relaxation treatment	Individualized hypnotic treatment	No treatment
Control	Hypnotic relaxation treatment	Educational period	Individualized hypnotic treatment	No treatment

Subjects were assigned a treatment schedule after the first performance so that the treatment schedule groups could be balanced for severity of performance anxiety, as indicated by self-report. This was necessary, because one group was to receive training in self-hypnosis as an additional treatment prior to a follow-up measure, the purpose being to compare maintenance of therapeutic gain with and without continued

involvement with hypnosis. This was made possible by omitting the separate educational phase from that group's schedule.

Not counting the training in self-hypnosis, the four treatment conditions included a control period, an educational period, a hypnotic relaxation treatment, and an individualized hypnotic treatment, each lasting approximately one month. The follow-up measures were taken at a performance five weeks after the performance marking the end of the final treatment phase.

During the control period, with which all subjects began, there was no treatment. As in the treatment phases, the investigator met weekly with each subject individually for approximately one hour. These sessions were held in therapy rooms of the university's psychological clinic and, during this phase, were used to administer several assessment instruments. These included the Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway and Mckinnley, 1967), the Test of Attentional and Interpersonal Style (TAIS) (Nideffer and Pratt, 1973), and the Object Relations Technique (ORT) (Phillipson, 1955).

The MMPI remains the most widely used and researched objective personality inventory in use today. The standard form (form R), which contains 400 true-false items, was used. Interpretation followed commonly used guidelines for step-by-step profile evaluation using the standard validity scales and ten clinical scales.

The TAIS is also a paper-and-pencil test and contains 144 items. Subjects respond to each item by indicating the frequency with which the item describes their own behavior (e.g., "I can keep track of a

number of different ideas at one time"). The TAIS is designed to measure attentional and interpersonal processes which have been shown to be important in understanding, predicting, and controlling behavior. It has been used widely in sports psychology, marital counseling, and police selection and screening. It has also been used by its author in studying music performance anxiety (Nideffer and Hessler, 1978). Reliability and validity information is cited in its manual (Nideffer, 1977).

The ORT is a projective test which has features in common with the better known Rorschach and Thematic Apperception Test (TAT). As in the TAT, pictures are presented to the subject, and the subject is asked to imagine what they could be and make up brief stories about them. As in the Rorschach method, questions are later asked of the subject aimed at clarifying how the stimulus was perceived and used. This also enables the examiner to test how far and in what direction the subject can vary his perception, the story structure, and the relationships seen between persons in the pictures. This is a test which grew out of British object relations theory and has been used extensively in Great Britain. Its introduction to the United States is relatively recent, and it has seen more experimental than clinical use in this country thusfar. Normative data and validation studies are available (Phillipson, 1955).

The educational phase consisted of general discussion of performance anxiety aimed at broadening the individual's understanding of the nature of the problem. The subject's own performance experience was also discussed, as were assessment results and their implications for strategies for dealing with performance anxiety.

Hypnotic relaxation treatment consisted of sessions during which the investigator induced trance and worked with the subject in deepening trance using standard deepening procedures such as imagery exercises and repeated alternating awakening and induction suggestions. Subjects typically spent about half of each session simply experiencing deep trance in the absence of communication from the investigator. Permission was given to think about the performance situation and imagine how experience with trance might be helpful, but no suggestions were made. Emphasis was on the experience and control of deep relaxation.

Individualized hypnotic treatment sessions involved further investigation of the individual's performance anxiety experience through discussion while subjects were both in trance and in the waking state. In addition, information derived from the three assessment instruments was used in treatment planning. The MMPI was used primarily for screening purposes. Some individuals are considered at risk, particularly when certain hypnoanalytic techniques are used, as a result of the tenuous nature of their ego defenses. The MMPI was used to get a general idea of ego strength, so that any such individuals could be identified and either be asked to discontinue involvement in the study or be treated in a particular way. Because of certain scale elevations, one subject, for example, was treated with purely supportive hypnotic techniques.

The TAIS was used in an effort to understand how the individual's performance anxiety reflected more general interpersonal and attentional tendencies. The test was designed to measure 17 factors

which, when compared with each other and with normative data, enable one to predict how an individual is likely to behave in interpersonal situations, permit one to outline attentional strengths and weaknesses, and help one to understand how attentional and interpersonal styles are interrelated. In some cases, MMPI data were useful in broadening this picture. In that the TAIS measures specific abilities and tendencies, it enables predictions to be made about about probable response to different treatment strategies. For example, an individual who has difficulty broadening attention appropriately can often benefit from an emphasis on relaxation. On the other hand, an individual who has difficulty narrowing attention enough and maintaining an appropriate focus would be expected to benefit less from relaxation and more from the use of trance in narrowing and controlling focus. In general, therefore, the TAIS was used primarily to identify appropriate hypnotic techniques aimed at enhancing attentional efficiency. These techniques are supportive in the sense that trance experience is used as a model for strengthening relevant ego functions.

The ORT was used primarily as an aid in understanding something about the dynamics underlying the manifest interpersonal behavior and attentional style. In addition, related current issues (e.g., separation from family, conflict with teacher, ambivalence regarding professional goals, etc.) were often illuminated. This information was useful in tailoring communications which would enable the subject to understand something about the context out of which his performance anxiety had emerged. Such communication involved both direct

discussion of concerns suggested by the ORT and hypnotic suggestions designed to evoke self-discovery of important issues.

Though use of assessment instruments has been presented in a step-by-step form, it must be emphasized that the process was highly interactive. For example, while the content of communications was informed more by information from the ORT and discussion with each subject, the form of the communications was often influenced by considerations with respect to interpersonal style as illuminated by the TAIS.

Although hypnotic and post-hypnotic suggestions were tailored to individual experience and dynamics, use of sessions followed a common pattern representing a progression through several well-known hypnotic techniques. The first of these was the "Affect Bridge" technique (Watkins, 1971). In this procedure, trance was induced and the subject was instructed to experience a recent performance. The anxiety associated with that performance was then used as a bridge across which the subject could travel back to the first, or at least an earlier situation in which the experience was the same. Here the objective was some limited working through of an emotional abreaction and the setting of the stage for enhancement of self-image.

The second technique involved utilization of visualization of and identification with a favorite performer as a means of furthering self-image enhancement (Mordey, 1965). It was also used as a means of providing groundwork for subsequent suggestions for more appropriate attentional focus. These suggestions were more general than specific and were introduced in the context of discussion of automatic

(unconscious) control, deliberate (conscious) control, and the relative merits of each. An example is the suggestion that reliance on automatic control, as is experienced in trance, and conscious focus on the sound of the music can enhance each other (Hilgard, 1970).

Finally, a general suggestion was usually made, particularly with subjects who continued to be openly skeptical, in the form of what Lankton and Lankton (1983) have termed a "Double Dissociative Conscious/Unconscious Double Bind." An example would be: "One might let the unconscious control the playing of the piece while the conscious focuses on the sound, or one might let the unconscious communicate with the audience through the music while the conscious focuses on important technical matters." (For further description of the treatment of each subject, please refer to Appendix E.)

Each period of treatment was followed within a few days by a performance situation as previously described. The control phase ended and a performance was held just before the Christmas break, with the next phase beginning immediately upon the students' return. Similarly the beginning of the fourth phase was delayed by the spring break. Availability of the music hall produced some slight variation in the schedule, but all treatments involved 3 or 4 weekly sessions.

CHAPTER III

RESULTS

Group Results

Scores for the seven subjects who participated in the study are presented in Table I and Table II on the following pages. The reader is referred to the appendices for the instruments used in generating these scores. As shown in these two tables, results are incomplete in some respects for all subjects, either because of a subject's absence from a performance situation or because a rater was absent. As a result there are variations, both in the types of comparisons made across measures and in the number of scores available for between treatment comparisons. For example, it was impossible, as originally planned, to compare sums or means of ratings of anxiety because of the pattern of rater absence. Therefore the reader is advised to refer to these two tables for clarification of variation in degrees of freedom reported for different comparisons, as well as differences in the comparisons chosen.

Figure 1 illustrates the variation in mean scores on the anxiety self-report measure across treatments. The reader is reminded that different subjects followed different treatment schedules, and the order of treatment presented here has been standardized for the purpose of graphic presentation. It should also be noted that two means are presented for each treatment. One is the mean score of the subjects who were present for all measures--the true mean for the repeated

Table I. Results by raw score of performance anxiety measures for each subject following each treatment period.

		Treatment					
		1	2	3	4	5	6
<u>Schedule A</u>		<u>BL</u>	<u>BL</u>	<u>REL</u>	<u>IND</u>	<u>SEL</u>	<u>F</u>
Subj.	Self	81	81	67	58		56
1	Rater #1	11	11	6			8
	" #2	8	9	7	6		6
	" #3		9	9			13
Subj.	Self	85	75		53		
5	Rater #1	8	8				
	" #2	7	6		6		
	" #3		9				
Subj.	Self	64	64	52	55	46	
6	Rater #1	7	11	12			
	" #2	8	7	6	7	6	
	" #3		11	9		9	
<u>Schedule B</u>		<u>BL</u>	<u>BL</u>	<u>ED</u>	<u>REL</u>	<u>IND</u>	<u>F</u>
Subj.	Self	91	87	86	82	76	67
2	Rater #1	13	18	20			17
	" #2	12	16	17	12	10	11
	" #3		13	10		12	10
Subj.	Self	62	83	74	80	69	68
4	Rater #1	9	18	13			14
	" #2	8	6	8	7	6	7
	" #3		10	9		14	14
Subj.	Self	49	49	48	43	41	44
7	Rater #1	13	15	14			9
	" #2	13	8	6	6	6	7
	" #3		7	9		13	13
<u>Schedule C</u>		<u>BL</u>	<u>BL</u>	<u>REL</u>	<u>ED</u>	<u>IND</u>	<u>F</u>
Subj.	Self	84	86	79	86	50	61
3	Rater #1	17	16	20			22
	" #2	13	11	12	13	12	10
	" #3		7	6		11	13

BL = baseline

ED = educational period

REL = hypnotic relaxation treatment

IND = individualized hypnotic treat.

SEL = self-hypnosis training

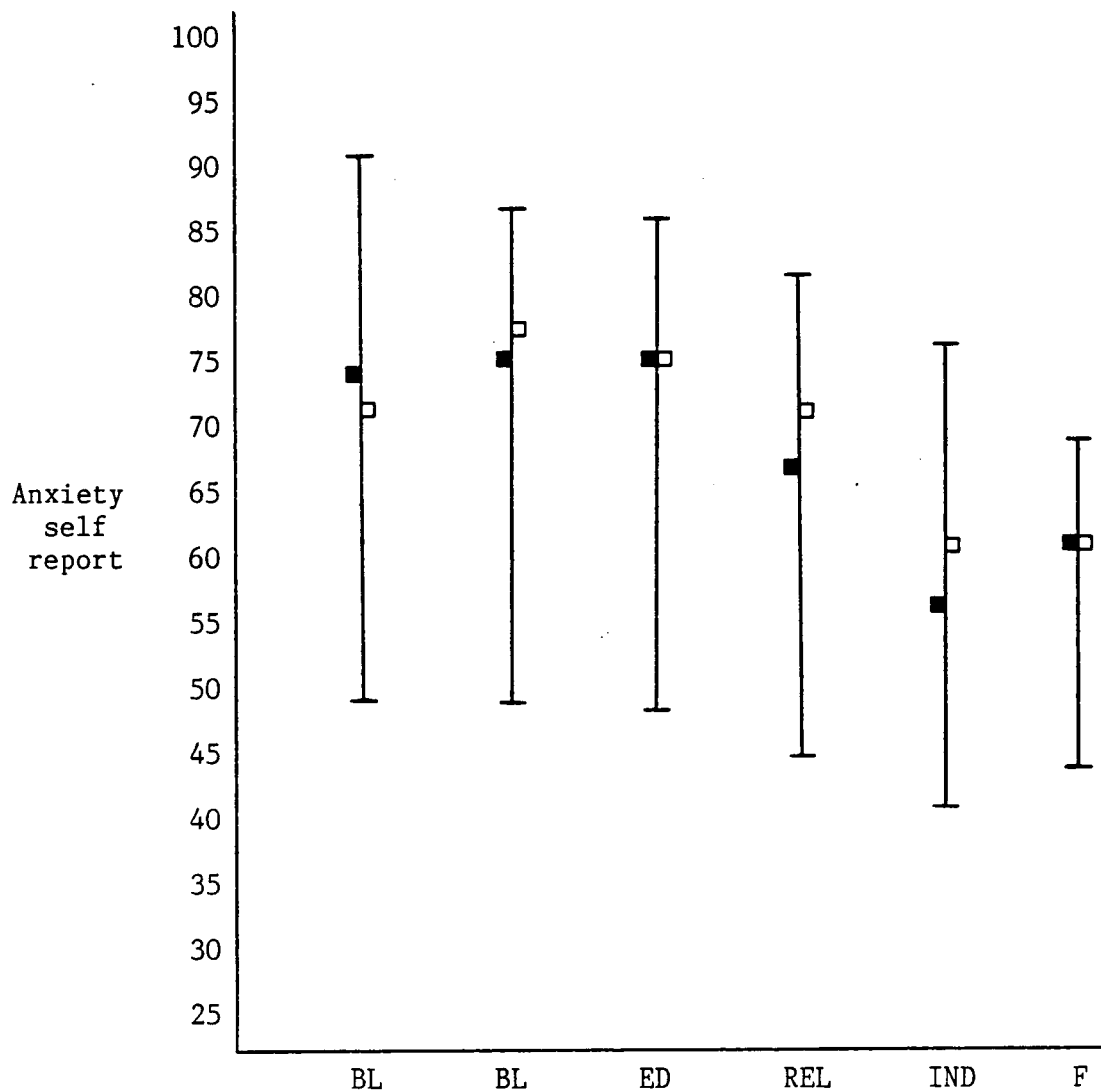
F = follow-up

Table II. Results by raw score of performance quality measures for each subject following each treatment period.

			Treatment					
			1	2	3	4	5	6
<u>Schedule A</u>			<u>BL</u> (81)	<u>BL</u> (81)	<u>REL</u> (67)	<u>IND</u> (58)	<u>SEL</u>	<u>F</u> (56)
Subj. 1	Rater #1		28	28	27			20
	" #2		17	41	20	36		21
	" #3			28	24			18
Subj. 5	Rater #1		(85) 16	(75) 24		(53)		
	" #2		10	13		15		
	" #3			17				
Subj. 6	Rater #1		(64) 28	(64) 35	(52) 22	(55)	(46)	
	" #2		25	30	9	27	17	
	" #3			30	17		18	
<u>Schedule B</u>			<u>BL</u> (91)	<u>BL</u> (87)	<u>ED</u> (86)	<u>REL</u> (82)	<u>IND</u> (76)	<u>F</u> (67)
Subj. 2	Rater #1		43	57	54			41
	" #2		33	44	33	29	34	41
	" #3			49	34		30	37
Subj. 4	Rater #1		(62) 24	(83) 42	(74) 24	(80)	(69)	(68) 41
	" #2		13	44	8	18	16	28
	" #3			28	29		26	36
Subj. 7	Rater #1		(49) 30	(49) 27	(48) 22	(43)	(41)	(44) 17
	" #2		31	19	23	21	17	17
	" #3			23	27		22	20
<u>Schedule C</u>			<u>BL</u> (84)	<u>BL</u> (86)	<u>REL</u> (79)	<u>ED</u> (86)	<u>IND</u> (50)	<u>F</u> (61)
Subj. 3	Rater #1		41	48	44			34
	" #2		31	49	36	31	35	31
	" #3			22	22		25	27

* Numbers in parentheses are anxiety self-report scores.

* Lower performance quality scores reflect better performances.



□ = means for subjects present for all performances
 ■ = means for all subjects
 I = range of scores
 BL = baseline period
 ED = educational period
 REL = hypnotic relaxation training
 IND = individualized hypnotic treatment
 F = follow-up

Figure 1. Mean raw scores on the modified State-Trait Anxiety Inventory (form Y-1) following each treatment.

measures design. The other is the mean score of all subjects present when that particular measure was taken. Both scores are provided in the interest of presenting a balanced picture. For example, subject #6 was absent only at the performance when the follow-up measure was taken, and therefore inclusion of his scores is warranted when comparing variation across the other measures.

As illustrated in Figure 1, self-reported anxiety remained relatively constant throughout the baseline period. Scores also remained relatively constant for those subjects who participated in an educational period immediately following the baseline period. The one subject for whom the educational period followed hypnotic relaxation training reported a return to the pre-relaxation level at the end of the educational phase. In contrast, scores immediately following the relaxation training were significantly lower (.05 level, $t=2.04$, $df=5$) when compared with mean baseline scores. Scores following individualized hypnotic treatment were significantly lower than the scores following relaxation training (.05 level, $t=2.02$, $df=5$). Finally, there was little increase in anxiety during the follow-up period. Anxiety, as measured at the end of the follow-up period, remained significantly lower than that measured following hypnotic relaxation training (.01 level, $t=3.39$, $df=4$). Statistical significance was evaluated here, and in all subsequent comparisons, using a one-tailed t-test for repeated measures. Significance was also evaluated using a more conservative nonparametric test, the Wilcoxon Matched-pairs Signed-ranks Test. Using this test, all comparisons significant under the t-test were also found to be significant with the

exception of the mean baseline--post-relaxation comparison. This exception resulted from the fact that subject #4 (see Table I) reported a substantial increase in anxiety during the baseline period. Comparison of mean self-reported post-relaxation anxiety with that following the second baseline measure would have yielded significance.

These results are also considered significant in terms of amount of change relative to the response range on the modified State-Trait Anxiety Inventory. With 26 items, each of which receives a score of from 1 to 4, the range of possible scores is from 26 to 104. A change from mean baseline scores around 75 to a mean score of 59 following the individualized treatment comes close to representing a shift from a mean item score of 3 to a mean item score of 2, or from "moderately" to "somewhat" anxious on the average item. This seems to reflect just the amount of change one would hope for. One would expect some anxiety to remain, not only as an inevitable accompaniment, but as a necessity for optimum performance. As will be seen in the results for individual subjects, one subject scored consistently in the 40's and was atypical in the sense that the emphasis was on control of arousal rather than on anxiety reduction. Without that subject's data, the mean change would have been even greater. That subject's reported concern about being "flat" during a recital late in the year also suggests that scores below 50 on this instrument may reflect a less than optimum anxiety or arousal level.

Results of ratings of anxiety by piano faculty members using behavioral checklist items were less convincing. Part of the reason, as with the ratings of performance quality, was that many of the scores

could not be used because of rater absence. For example, rater #1 was absent for all performances following individualized treatment, leaving nothing with which to compare his earlier ratings. There was a correlation of .69 between ratings from rater #1 and rater #2, suggesting that there was reliability in their use of the instrument. There was a very low correlation between the ratings of rater #3 and those of the first two, but there was considerable evidence that rater #3 used the instrument both inconsistently (e.g., using a 0 as a base score at some times and a 1 at other times) and with less discrimination.

Absences by raters #1 and #3 left rater #2's scores as the only ones which could be used for most comparisons. In addition, it can be argued that these ratings may reflect better consistency as a result of regular attendance. There was a significant correlation (.44) between rater #2's scores and the self-report scores, where there was virtually no correlation between self-report scores and those of the other two raters. As with the self-report scores, rater #2's scores reflect a significant decrease in anxiety from mean baseline scores to those following relaxation training (.05 level, $t=2.34$, $df=5$), from mean baseline scores to those following individualized treatment (.05 level, $t=2.70$, $df=5$), and from mean baseline scores to those taken after the follow-up period (.05 level, $t=3.64$, $df=4$).

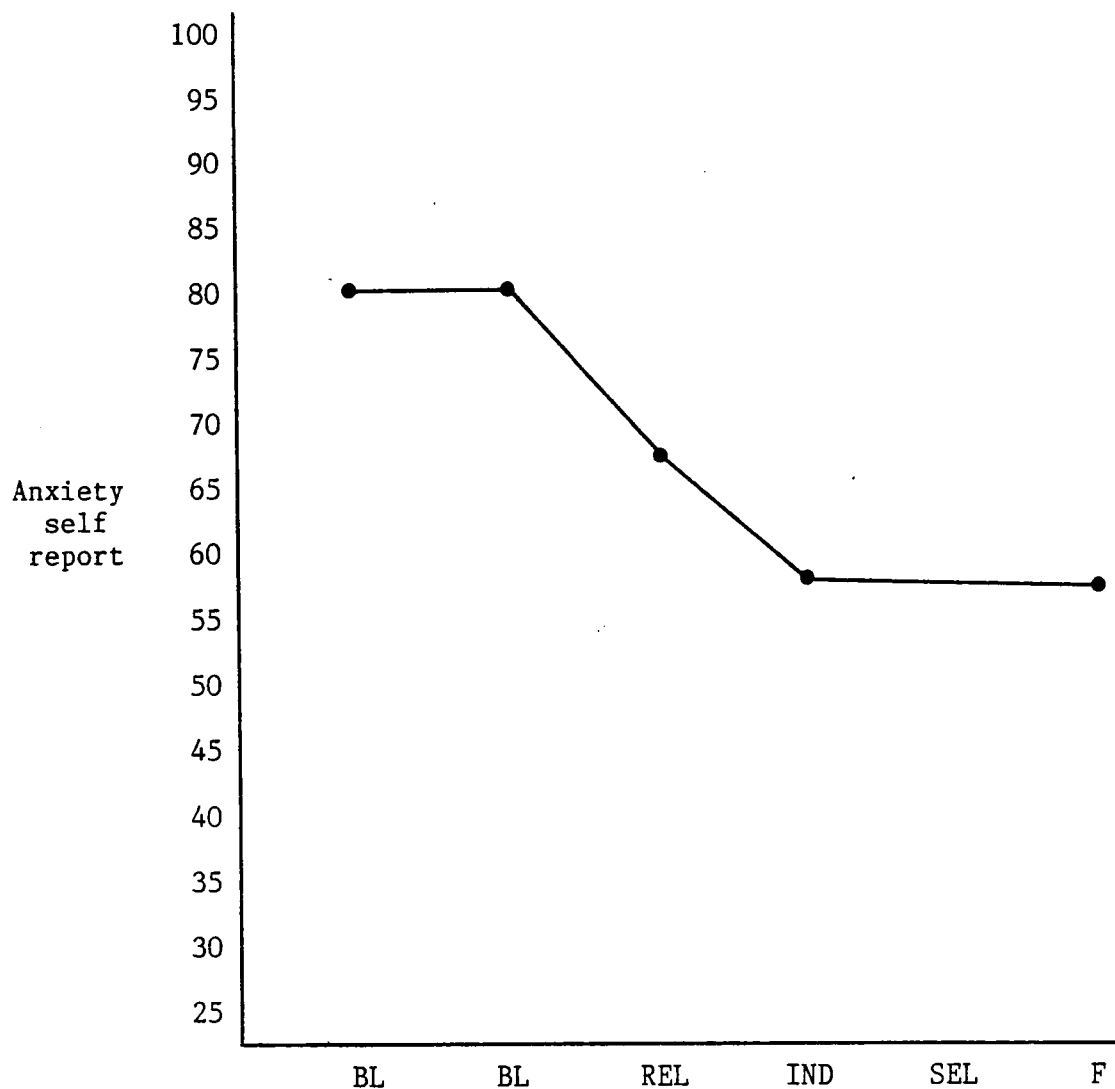
A factor which, when taken into account, further supports the significance of the concordance between these ratings and self-report scores is the restriction on variance resulting from the nature and rater use of the rating instrument. There are 6 categories, each of

which requires a minimum score of 1, the minimum total score, therefore, being 6. The mean baseline score for all raters across all subjects was 10.65, and for rater #2 alone it was 9.42. Subject #5, for example, received ratings of 7 and 6 from rater #2 during the baseline period, leaving no room for subsequent improvement to be acknowledged. Given this restricted range, the sample size, and the relative imprecision of the rating technique, it can be argued that a gross treatment effect is likely present based on the scores from rater #2 alone. That differences are in concordance with those in the self-report scores results in strong support for the probability of treatment effects, tempered only by lack of agreement in the incomplete scores of the other two raters.

Performance quality ratings indicate little more than a general improvement during the course of the study, something which would be expected of students under most circumstances. More notable was the extreme variability in scores along the way, featuring considerable disagreement among raters. Despite instructions to subjects that they play only pieces which had been learned thoroughly, with which they were comfortable, and which were performance ready, it became apparent during the study that pieces performed at different times varied greatly as to difficulty and level of mastery. This was confirmed by subjects at the conclusion of the study and was considered inevitable under the circumstances of their ongoing training.

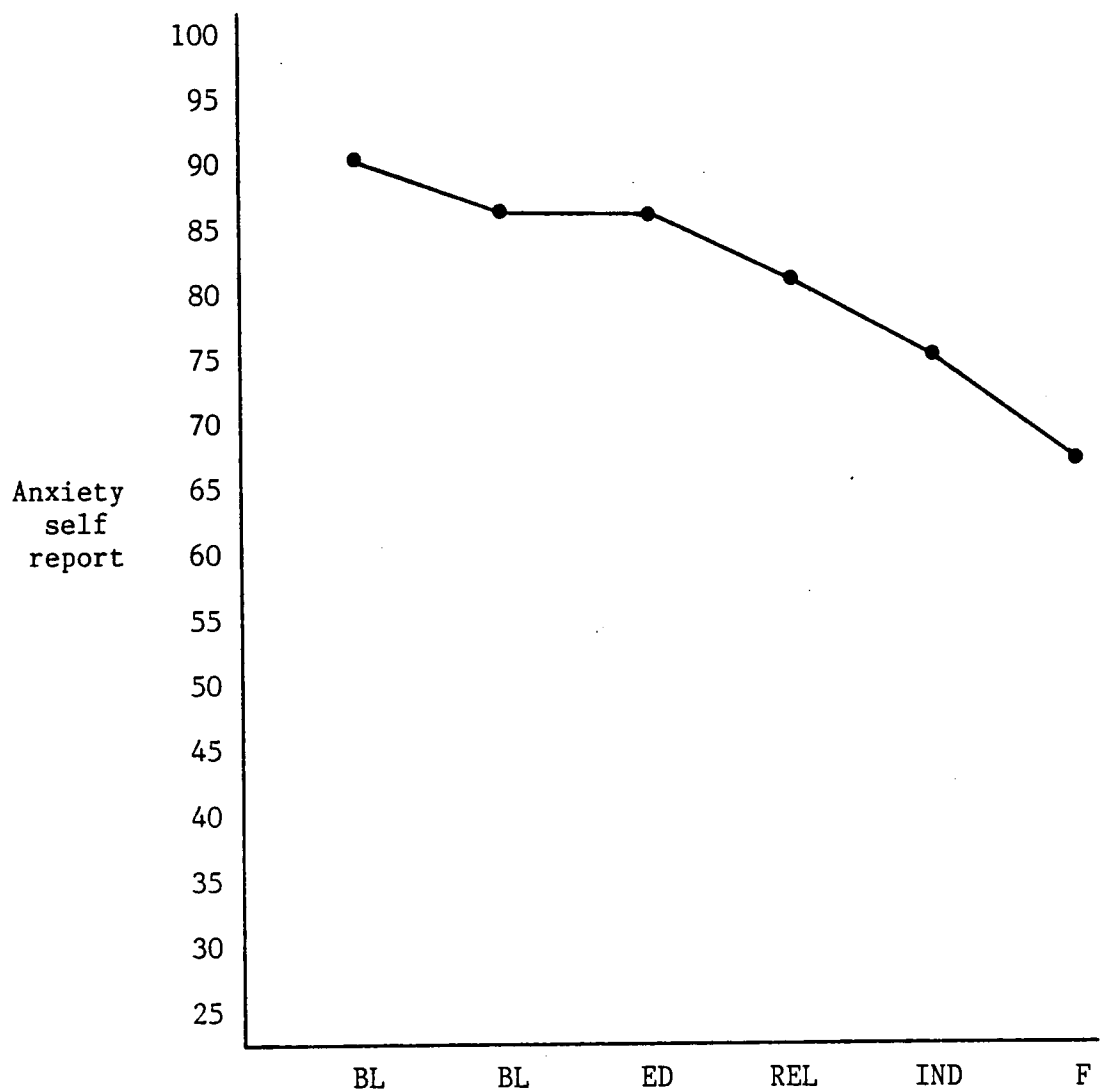
Individual Results

Figures 2 through 8 illustrate changes in self-reported anxiety



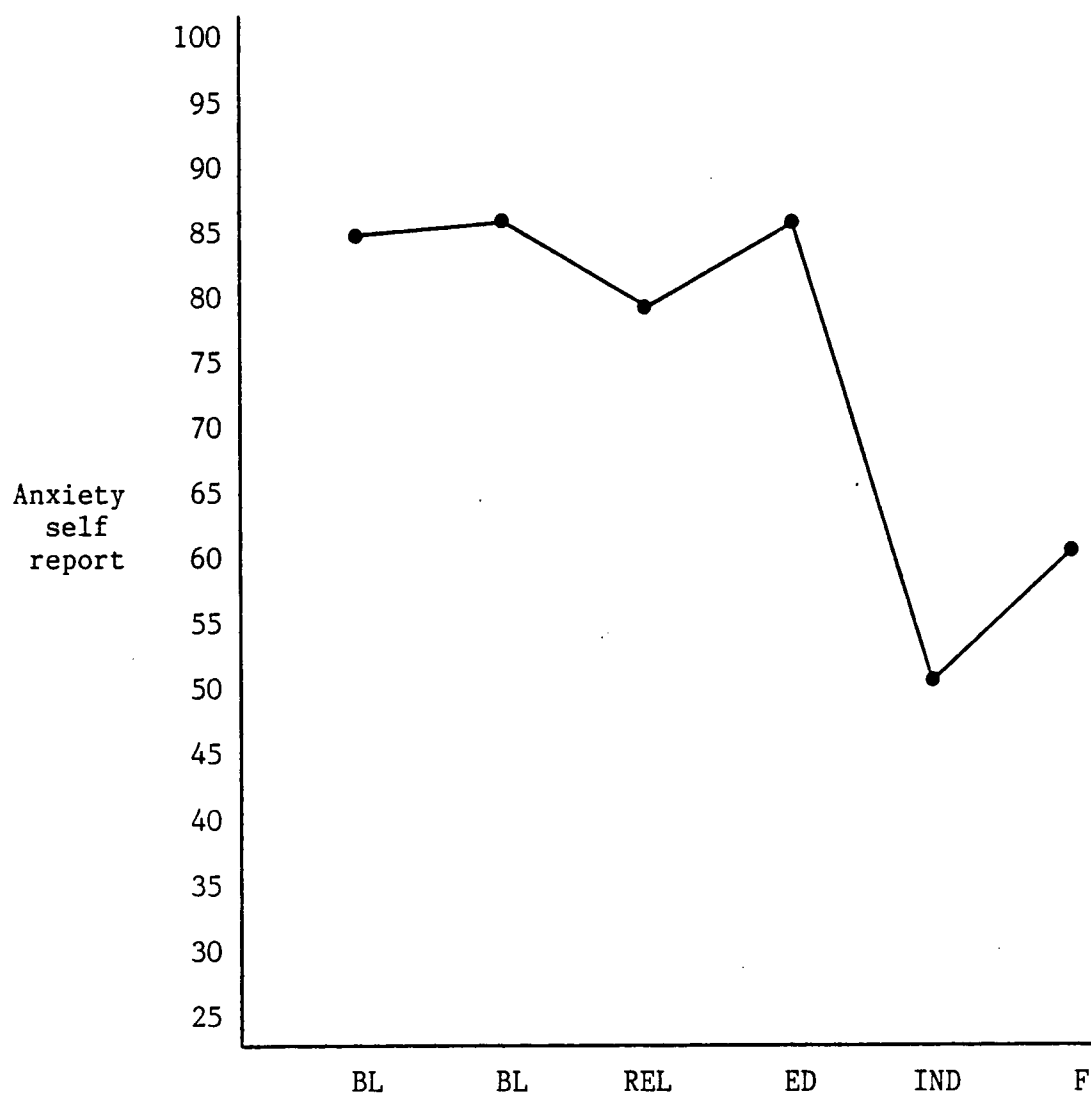
BL = baseline period
REL = hypnotic relaxation training
IND = individualized hypnotic treatment
SEL = self-hypnosis training
F = follow-up

Figure 2. Raw scores For Subject #1 on the modified State-Trait Anxiety Inventory (form Y-1) following each treatment.



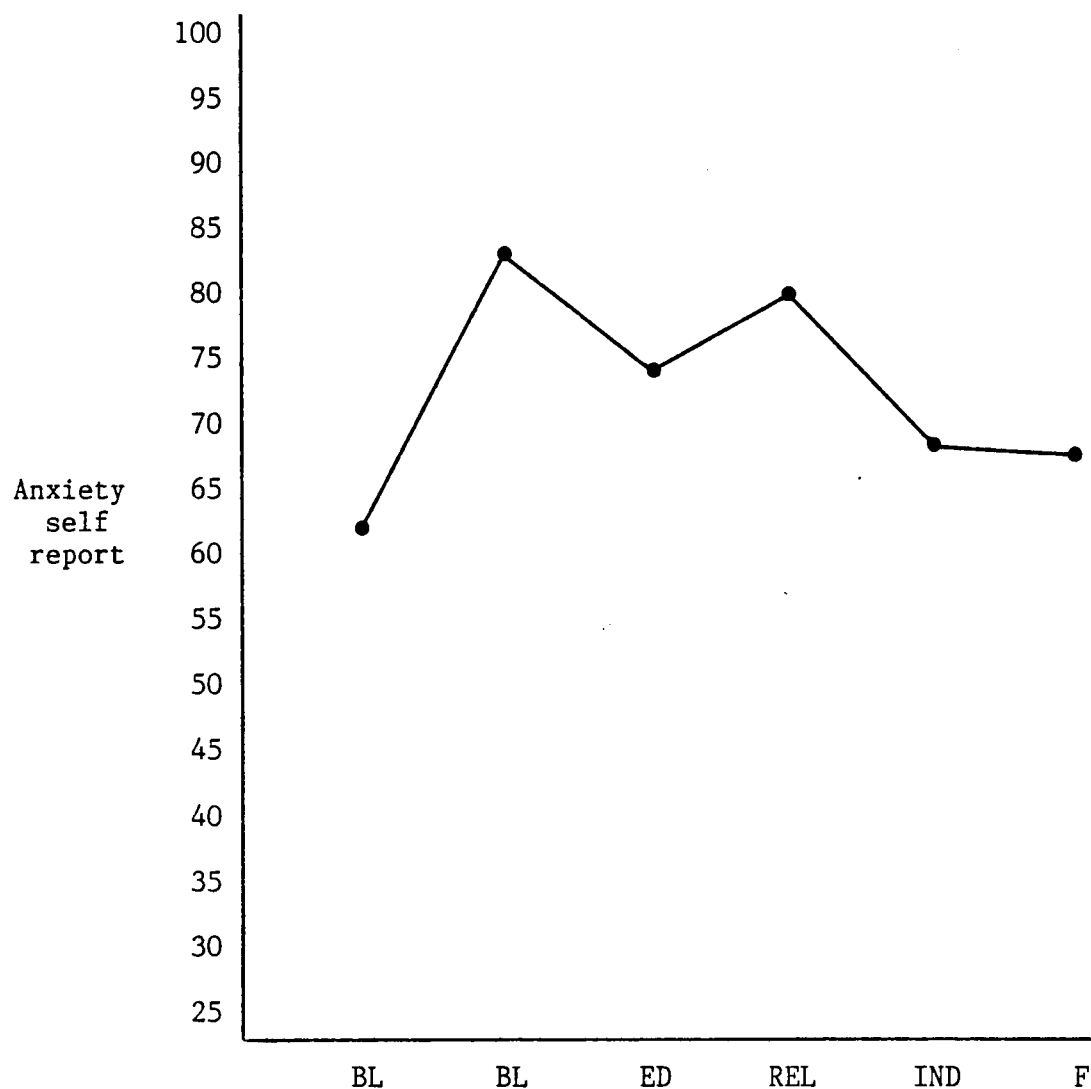
BL = baseline period
ED = educational period
REL = hypnotic relaxation training
IND = individualized hypnotic treatment
F = follow-up

Figure 3. Raw scores For Subject #2 on the modified State-Trait Anxiety Inventory (form Y-1) following each treatment.



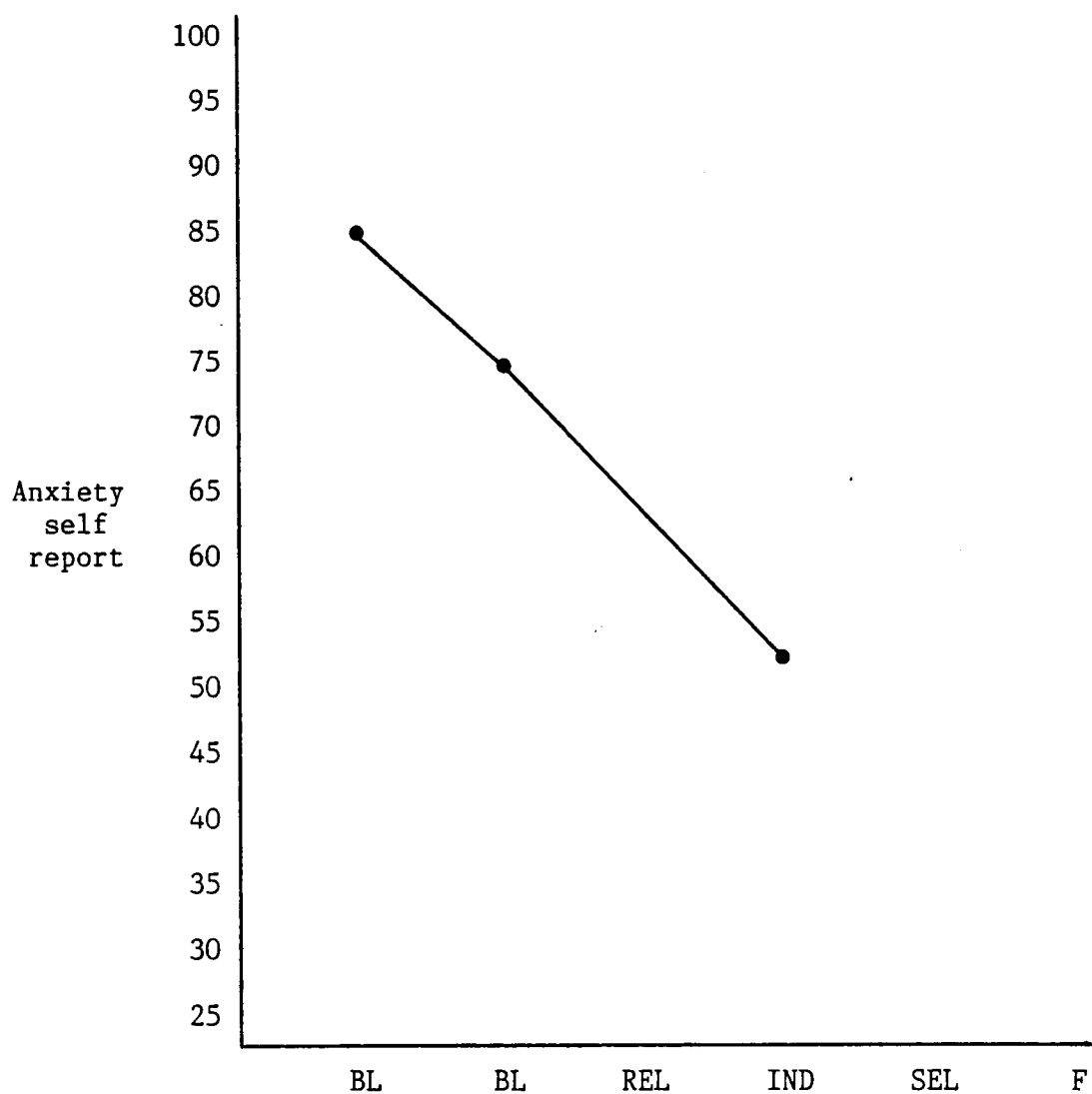
BL = baseline period
REL = hypnotic relaxation training
ED = educational period
IND = individualized hypnotic treatment
F = follow-up

Figure 4. Raw scores For Subject #3 on the modified State-Trait Anxiety Inventory (form Y-1) following each treatment.



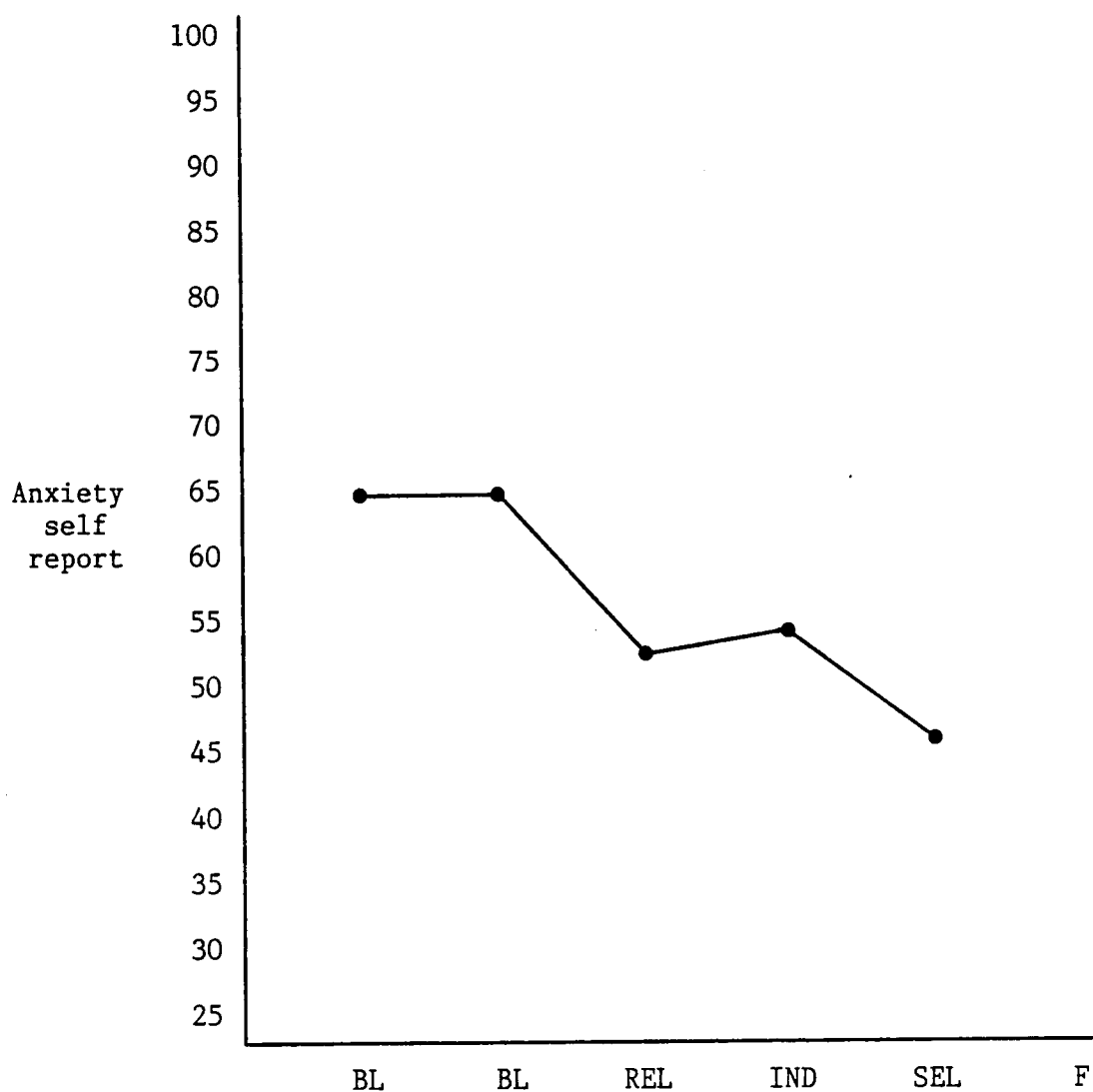
BL = baseline period
ED = educational period
REL = hypnotic relaxation training
IND = individualized hypnotic treatment
F = follow-up

Figure 5. Raw scores For Subject #4 on the modified State-Trait Anxiety Inventory (form Y-1) following each treatment.



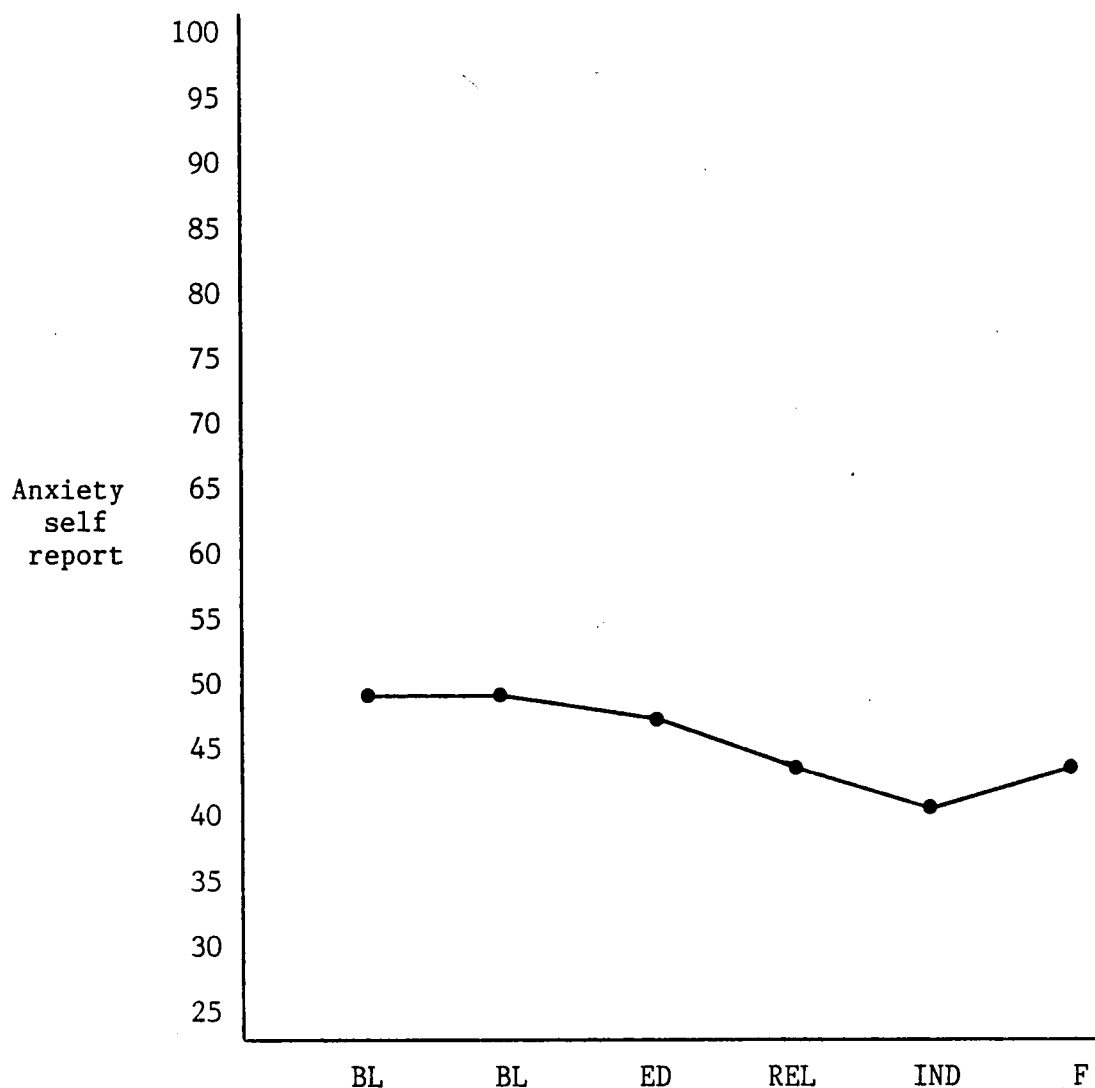
BL = baseline period
REL = hypnotic relaxation training
IND = individualized hypnotic treatment
SEL = self-hypnosis training
F = follow-up

Figure 6. Raw scores For Subject #5 on the modified State-Trait Anxiety Inventory (form Y-1) following each treatment.



BL = baseline period
REL = hypnotic relaxation training
IND = individualized hypnotic treatment
SEL = self-hypnosis training
F = follow-up

Figure 7. Raw scores For Subject #6 on the modified State-Trait Anxiety Inventory (form Y-1) following each treatment.



BL = baseline period
ED = educational period
REL = hypnotic relaxation training
IND = individualized hypnotic treatment
F = follow-up

Figure 8. Raw scores For Subject #7 on the modified State-Trait Anxiety Inventory (form Y-1) following each treatment.

for each subject throughout the treatment schedule in which that subject participated. Brief treatment accounts, including assessment information and expressed reactions to treatment are included in Appendix E.

TAIS Group Comparison

Mean scores on TAIS subscales were compared with mean scores Nideffer (1977) has reported for a group of 64 Eastman students. Cochran and Cox's (1957) method for estimating required critical values of t' for samples with different variances was used. Significant differences were found on both the CON (.05 level, $t'=3.36$) and the P/O (.01 level, $t'= 5.31$) scales. These scales reflect the extent to which the individual sees himself as being in control over most interpersonal situations and the degree of physical orientation as measured by participation in and enjoyment of competitive athletics and physical activity. This group scored significantly lower than the Eastman students on both scales. It should be noted that the mean age of the Eastman students was 18.4 years, which is considerably lower than it would be for this group. Some of the difference in the P/O scale may be due to undergraduate physical education requirements, intramural athletics, etc.

This group's score (36.0) on the CON scale is particularly striking when compared with the mean scores from other groups Nideffer has tested: psychology students (42.1), medical patients (40.6), business executives (49.5), police applicants (47.8), and psychiatric patients (37.3). Nearly a standard deviation below the Eastman mean

was the mean score on the NAE scale, a measure of tendency to be confrontive and to express anger and negative feelings to others. Again, this score was lower than that of any other group. Taken together, these scores suggest that concern with lack of control (possibly reflected in concern about physical control) and discomfort with self-assertion may be characteristic of those suffering from stage fright.

No significant differences were found among the attentional scales, although this group appears to be less analytical and more prone to being overwhelmed by environmental information than the Eastman students. Only the means for psychiatric and medical patients were lower on the scale measuring ability to integrate ideas and information, and only the mean for psychiatric patients was higher on the environmental stimulus overload measure. One way of understanding how this might fit in with the other scores is to view inability to integrate ideas and deal effectively with information from the environment as a result of too much attention to the environment arising from concern about what others may think. This group, like the students whom Kemp (1981) studied, seem to place a premium on living up to the expectations of others. Group means and standard deviations for TAIS scales are presented in Appendix F.

CHAPTER IV

DISCUSSION

The Research Questions

The primary goal of this study was to investigate the effectiveness of a systematic individualized hypnotic treatment for stage fright, a treatment approach suggested by case reports but heretofore the object of no systematic study. In order to examine the matter of effectiveness, the following questions were addressed:

- (1) Does a decrease in self-reported performance anxiety follow relaxation training utilizing trance?
- (2) Does a decrease in self-reported performance anxiety, beyond that resulting from relaxation training alone, occur following individualized treatment?
- (3) How does the amount of change reported compare with the amount of change one would hope to see, given the range of the self-report instrument used?
- (4) Are gains maintained for a period of time following termination of treatment?
- (5) Does use of self-hypnosis affect maintenance of gains?
- (6) Do the responses of expert raters to measures of anxiety and performance quality support self-report data?

Although interviews and information from assessment instruments were employed primarily in order to plan treatment strategies, these data also made possible some limited hypothesis testing, in that the treatment outcome for each subject can be seen as a test of the validity of assumptions inherent in the treatment plan. A secondary goal of this project was to provide data which could be useful in

further making sense of stage fright phenomena and in characterizing those whose experience of stage fright is of such severity as to be uncomfortable and detrimental to performance. This case study material, along with comparison of group TAIS data was employed in this regard, albeit in a very limited way.

Summary of Results

Self-report data provided strong support for what most of the subjects reported informally, that the individualized hypnotic treatment was helpful in achieving a reduction in performance anxiety. Reductions in anxiety following relaxation training were reported by 5 of 6 subjects. Further reductions in anxiety were reported following individualized treatment by 3 of 4 subjects. The subject who did not report anxiety reduction following relaxation did report substantial reduction following the individualized treatment, and the subject who was not present for the performance following the relaxation training reported dramatic reduction in anxiety from baseline levels following individualized treatment. These results were supported by the ratings of anxiety from the one rater who attended all performances. Given the relatively low level of precision one would expect in a measure of anxiety relying purely on observation of physiological signs and the small sample size, that statistically significant differences were obtained is strong evidence of a gross treatment effect. In addition, the same trend can be seen in the scores of one of the other two raters. Results from the third rater did not correlate highly with the other two, but there was evidence of inconsistency in that rater's use

of the instrument, likely resulting in progressively higher scores throughout the study. Finally, the accuracy of predictions of treatment success on a case by case basis, suggested by assessment information, provided another kind of validation of the treatment approach. For example, analysis of TAIS attentional scales appears to be useful in predicting whether an individual is likely to benefit from relaxation training alone.

No trend was observable in the ratings of performance quality. As has been discussed previously, the inability of the subjects to comply with the instruction that they were to play only thoroughly-learned pieces with which they were comfortable is likely to have precluded performance quality effects. Only 1 of the 3 subjects assigned to the group which received training in self-hypnosis was present when the follow-up measure was taken. Although gains were maintained for that subject, two other subjects reported continued reductions in anxiety at follow-up, while two reported some increase in anxiety. Thus, although both of the subjects who finished the study and had received training in self-hypnosis reported informally that they had found it useful, the results of the attempt to investigate the usefulness of self-hypnosis in maintaining treatment gains were inconclusive. At follow-up all subjects did continue to report levels of anxiety that were lower than mean baseline levels. For all but the one subject whose anxiety levels changed very little throughout the study, follow-up levels were substantially lower.

Finally, TAIS group comparisons with Nideffer's Eastman sample suggested that those who experience stage fright differ from those who

do not with respect to certain matters of attentional style and characteristic approach to interpersonal situations. Particularly notable was the low mean score in this group on the scale measuring sense of being in control in interpersonal situations. This in turn suggests that enhancement of sense of control may be the most salient therapeutic feature in the hypnotic treatment approach that was used. Perhaps benefits which have been attributed to relaxation may even have been a function more of the individual's ability to control level of relaxation than of the relaxation itself. If this is the case, then success in hypnosis, or in learning self-hypnosis and in understanding the levels of control that it involves, may provide a compelling demonstration of just that type of control which the individual doubts that he possesses. Self-efficacy theory (Bandura, 1977) is an example of a theory that would suggest that this may be the case.

Limitations of the Study and Methodological Implications

In addition to the more obvious problems of generalizing from such a small sample, there are, of course, a number of factors, the possible effects of which cannot be accounted for by this study. The subjects in this study differed considerably with respect to competence, career objectives and status with respect to those objectives, and severity of performance anxiety. Given that a preliminary exploration of a number of factors was an objective, this was considered appropriate. The limited amount of descriptive data suggests, however, that the effectiveness of treatment may be influenced by: level of competence relative to the immediate peer group; extent to which one views himself

more as a student, more as a performer, or somewhere in between; and how one views performance in terms of career goals. For example, better players tended to improve more. Was this a treatment effect or a result of their learning how they measured up through experience with other group members? The evidence is weighted heavily in favor of treatment effects (improvement corresponded to period of treatment and tended to be less uniform across treatments in those who improved more), but the competence factor cannot be discounted entirely.

Comparison of these subjects' TAIS scores with those of the Eastman students should also be interpreted cautiously given the difference in average age in the two groups. Students in the Eastman sample averaged 18.5 years of age, while the mean age in this group was 24.7, with no subjects under 20 years of age. Although one might expect the older students to feel more in control rather than less so, the difference might reflect, for example, a discrepancy between one's sense of being in control and one's expectations of oneself at a particular point in life. Kemp's (1981) findings with respect to differences in personality traits among secondary music students, conservatory and university music students, and professional musicians suggest that extreme caution should be taken in making such cross-group comparisons.

This project began with 10 subjects, which was considered the maximum number that could be dealt with given the design of the study. Some attrition was anticipated and, in most respects, the value of the data was not seriously affected by the fact that a few dropped out along the way. It was unfortunate, however, that two subjects out of

the three who had been assigned to the third treatment schedule dropped out. Because different schedules had been adopted as a way of ruling out time effects, the fact that only one subject out of the seven underwent the educational treatment after the hypnotic relaxation treatment weakens the argument. He did report a decrease in anxiety following relaxation and a subsequent increase in anxiety following education. This and comparison of the slopes of the other graphs provide support for the conclusion that effects resulted from treatment and not merely from accommodation over a period of time, but a stronger case could have been made if there had been more subjects completing the education after relaxation treatment schedule.

This is particularly important because other factors were present which could be suspected of affecting anxiety levels during the course of the school year. It could be argued, for example, that one should expect anxiety to decrease throughout the year as performance mastery increased and as the end of the year approached. Conversely, it could be argued that, because most of these subjects were seeing the number of days until their annual recitals steadily decrease, anxiety should be expected to increase. It was also impossible to account for differences in difficulty in the pieces each was working on and therefore performing at different times--something else, the effects of which, one might wonder about. Again, analysis of the results, particularly with respect to the timing of recitals, indicates that effects of such situational factors on performance anxiety were probably insignificant. Research using non-student subjects should be able to control better for such factors.

A related factor was the effect of the performance situation itself. Several of the subjects commented that the situations in which they performed during the study were more anxiety provoking than were their recitals, and that they had more difficulty blocking the faculty raters, seated behind the piano, out of their minds than they had doing the same with an audience. Because the performance situation remained essentially the same throughout the study, one would not expect there to be a direct effect on anxiety levels. For the few subjects who presented recitals at the university or performed in some other situation during the study, however, the potential for indirect effect is thought to have existed. A successful recital resulting in part from a contrast effect (or desensitization through the experience of dealing with more difficult attentional demands) could, for example, have affected the individual's confidence and subsequent success in dealing with the demands of the study's performance situations. It is rarely possible to eliminate entirely potential effects of the measures themselves. In this case, a performance situation was designed to imitate the recital situation as closely as possible. Ideally, measures would be taken during actual recitals, juries, auditions, etc.

Another matter which must be addressed and for which there seems to be no ideal solution was that of the manner in which performers were rated. The procedure, whereby faculty raters sat close to the performer and rated them during each performance, was adopted because their presence was thought necessary to evoke anxiety, because it was felt that an intangible quality in live performance could have been missed in ratings of recorded performances, because the sophisticated

video recording equipment necessary for ratings of taped performances was not available, and because difficulties with logistics were prohibitive, as well. One can observe signs of anxiety only from very close range. The zoom lenses used by television networks allow cameras to be placed at great distances from their subjects and still provide close-ups. Most video equipment, however, does not have this capability.

For purposes of rating performance quality, it is likely that live rating provides greater accuracy, even though good audio recordings are relatively easy to come by. When there is a lengthy time period between performances, however, it becomes difficult for raters to apply rating standards consistently. With recordings, all performances can be compared at one time. The recordings can also be coded so that the order of the performances can be concealed. It is not thought that inconsistency of quality ratings had any effect on the results of this study, because it was quite clear that quality varied greatly, independently of anxiety. In similar research with performers in whose performances there is greater consistency, however, it is considered likely that comparison of performances associated with varying levels of anxiety will be done most reliably through comparison of recordings.

An attempt was made to control for subject expectation effects by presenting the study as a comparison of ways of dealing with the problem of stage fright, all of which had met with some success. The educational period was included largely in order to rule out a placebo effect. The investigator was careful not to present any treatment as likely to be more effective than any other, and at no time during the

study did the investigator have the sense that subjects were waiting for the "real treatment." If anything, there seemed to be a persistent attitude of skepticism. It should be pointed out, however, that it was necessary, in the interest of adequately informing prospective subjects as to the nature of the study, to mention that hypnosis would be involved at some point. It was also necessary to screen them for hypnotizability. It is possible, therefore, that there may have been some supposition that hypnosis was an important feature of the study.

On the other hand, it is considered unlikely that such an expectation could have affected differences in response to the two hypnotic treatments. Most subjects probably had some awareness that another hypnotic approach would follow the first, but few, and particularly the three subjects who were to take part in self-hypnosis training, were likely to have been aware that the individualized treatment was to be the last.

Finally, one can argue that expectation is an important ingredient in treatment in general and in hypnotic treatment in particular. One might wonder, for example, if results might not have been more dramatic, and perhaps a better indicator of what one should expect clinically, if expectation had been enhanced rather than controlled. In this regard it is important to remember that treatment is always, in part, a reflection of the person who is conducting it. No claims were made of great expertise, history of treatment successes, etc. The investigator was presented as competent but not committed to any position as to treatment efficacy. The investigator did, in fact, have adequate experience in conducting hypnosis to insure subject safety,

but, in terms of conducting such treatment, was a relative novice. All of this suggests that treatment effects reported here may represent an understatement as to the potential effectiveness of hypnotic treatment conducted in a clinical setting by an experienced clinician.

Implications for Treatment

The individualized hypnotic treatment in this study was completed in three sessions. This was possible, because subjects had already become adept at entering trance, having undergone hypnotic relaxation training previously. Assessment, including initial interviewing and testing, was considered a vital part of the treatment. The MMPI is one of a number of instruments useful in screening individuals with whom the clinician is unfamiliar. Both the TAIS and the ORT were very helpful in treatment planning (see Appendix E). Results of this study suggest that a treatment allowing three or four sessions for assessment and another four sessions for hypnotic training and treatment, with optional training in self-hypnosis, can be effective in reducing performance anxiety.

Further Questions

The numerous questions raised by this research can be grouped into three areas: (1) Which of the elements of this treatment were most effective and why? Was the enhancement of sense of control the most powerful factor, as has been suggested, or was some other factor such as the relaxation itself? (2) What improvements can be made in this approach? For example, might strategically timed practice performances during treatment help solidify therapeutic gains by providing a means

of demonstrating them? Or might additional emphasis on desensitization through guided imagery, perhaps in a recital hall, augment the effects of hypnotic suggestion? (3) What personality characteristics predispose to performance anxiety? Although this question is listed last, and although investigation in this area was a secondary goal of this study, the understanding of performance anxiety dynamics is fundamental to understanding and improving treatment. Nideffer's earlier work made it possible for this study to shed some light on this issue. Instruments such as the TAIS, the ORT, and the Report of Confidence as a Performer Scale provide a ready means of investigating the relationship between personality variables and severity of performance anxiety.

LIST OF REFERENCES

LIST OF REFERENCES

- Adler, A. (1958). The Individual Psychology of Alfred Adler. H. L. Ansbacher & R. R. Ansbacher (Eds.), London: George Allen & Unwin Ltd.
- Adler, A. (1964). Superiority and Social Interest. (3rd rev ed.). H. L. Ansbacher & R. R. Ansbacher (Eds.), New York: Viking Press.
- Appel, S. S. (1974). Modifying solo performance anxiety in adult pianists. (Doctoral dissertation, Columbia University, 1974) Dissertation Abstracts International, 35, 3503A (University Microfilms No. 74-26, 580).
- Appel, S. S. (1976). Modifying solo performance anxiety in adult pianists. The Journal of Music Therapy, 13, 2-16.
- Ascher, L. M., & Efran, J. S. (1978). Use of paradoxical intention in a behavioral program for sleep onset insomnia. Journal of Consulting and Clinical Psychology, 46, 547-550.
- Bahrke, M. S. (1979). Exercise, meditation, and anxiety reduction: A review. American Corrective Therapy Journal, 2, 41-44.
- Bahrke, M. S., & Morgan, W. P. (1978). Anxiety reduction following exercise and meditation. Cognitive Therapy and Research, 2, 323-333.
- Bandura, A. (1977). Self-efficacy: Toward a unified theory of behavioral change. Psychological Review, 84, 191-215.
- Barrios, B. A., & Shigetomi, C. C. (1979). Coping-skills training for the management of anxiety: A critical review. Behavior Therapy, 10, 491-522.
- Bergler, E. (1949). On acting and stage fright. Psychiatric Quarterly Supplement, 23, 313-319.
- Boutin, G. (1978). The treatment of test anxiety with rational stage directed hypnotherapy. American Journal of Clinical Hypnosis, 21, 52-57.
- Brantigan, T. A., Joseph, N. H., & Brantigan, C. O. (1978). Beta-blockade and musical performance. The Lancet, 2, 896.
- Brantigan, T. A., Joseph, N. H., & Brantigan, C. O. (1982). Effect of beta blockade and beta stimulation on stage fright. The American Journal of Medicine, 72, 88-94.

- Brantigan, T. A., Joseph, N. H., & Brantigan, C. O. (1979). Stage fright revisited. The American Organist, 13, 20-21.
- Brockner, J. (1979). The effects of self-esteem, success-failure, and self-consciousness on task performance. Journal of Personality and Social Psychology, 37, 10.
- Campbell, P., Wilder, S., & Appignanesi, A. (1973). Hypnotic susceptibility and performance on a battery of creativity measures. The American Journal of Clinical Hypnosis, 15, 170-176.
- Cochran, W. G., & Cox, G. M. (1957). Experimental Designs, 2nd ed. New York: John Wiley and Sons, Inc.
- Craske, M. G., & Craig, K. D. (1984). Musical performance anxiety: The three-systems mode and self-efficacy theory. Behavioral Research and Therapy, 22, 267-280.
- Deutsch, L. (1950). Piano: Guided Sight Reading. Chicago: Nelson-Hall.
- Edmonston, W. E. (1979). The effects of neutral hypnosis on conditioned responses: Implications for hypnosis as relaxation. In E. Fromm & R. E. Shor (Eds.), Hypnosis: Developments in Research and New Perspectives. New York: Aldine Publishing Co.
- Epstein, S. (1972). The nature of anxiety with emphasis upon its relationship to expectancy. In C. D. Spielberger (Ed.), Anxiety: Current Trends in Theory and Research: Vol. II. New York: Academic Press.
- Fenichel, O. (1954). Collected Papers, 2nd Series. New York: Norton.
- Ferenczi, S. (1950). Further Contributions to the Theory and Technique of Psychoanalysis. London: Hogarth Press.
- Fogle, D. O. (1982). Toward effective treatment for music performance anxiety. Psychotherapy: Theory, Research, and Practice, 19, 368-375.
- Frankel, F. H. (1976). Hypnosis: Trance as a Coping Mechanism. New York: Plenum Medical Book Co.
- Gabbard, G. O. (1979). Stage fright. International Journal of Psychoanalysis, 60, 383-392.
- Gabbard, G. O. (1983). Further contributions to the understanding of stage fright: Narcissistic Issues. Journal of the American Psychoanalytic Association, 31, 423-441.

- Garver, R. B. (1977). The enhancement of human performance with hypnosis through neuromotor facilitation and control of arousal level. The American Journal of Clinical Hypnosis, 19, 177-181.
- Hamann, D. L. (1982). An assessment of anxiety in instrumental and vocal performances. Journal of Research in Music Education, 30, 77-90.
- Hathaway, S. & McKinnley, J. (1967). The Minnesota Multiphasic Personality Inventory Manual. New York: Psychological Corporation.
- Havas, K. (1973). Stage Fright: Its Causes and Cures. London: Bosworth.
- Hilgard, J. R. (1970). Personality and Hypnosis: A Study of Imaginative Involvement. Chicago: University of Chicago Press.
- Hurley, J. D. (1980). Differential effects of hypnosis, biofeedback training, and trophotropic responses on anxiety, ego strength, and locus of control. Journal of Clinical Psychology, 36, 503-507.
- James, I. M., Griffith, D. N. W., Pearson, R. M., & Newbury, P. (1977). Effect of oxprenolol on stage fright in musicians. The Lancet, 2, 952-954.
- James, I. M., Pearson, R. M., Griffith, D. N. W., Newbury, P., & Taylor, S. H. (1978). Reducing the somatic manifestations of anxiety by beta-blockade--A study of stage fright. Journal of Psychosomatic Research, 22, 327-337.
- Jaremko, M. E. (1980). The use of stress inoculation training in the reduction of public speaking anxiety. Journal of Clinical Psychology, 36, 735-738.
- Jaremko, M. E., Hadfield, R., & Walker, W. E. (1980). Contribution of an educational phase to stress inoculation of speech anxiety. Perceptual and Motor Skills, 50, 495-501.
- Kaplan, D. (1969). On stage fright. Drama Review, 14, 60-83.
- Kemp, A. (1981). The personality structure of the musician. Psychology of Music, 9, 3-14.
- Kendrick, M. J., Craig, K. D., Lawson, D. M., & Davidson, P. O. (1982). Cognitive and behavioral therapy for musical-performance anxiety. Journal of Consulting and Clinical Psychology, 50, 353-362.

- Kernberg, O. (1974). Further contributions to the treatment of narcissistic personalities. International Journal of Psychoanalysis, 55, 215-240.
- Kirsch, I., & Henry, D. (1979). Self-desensitization and meditation in the reduction of public speaking anxiety. Journal of Consulting and Clinical Psychology, 47, 536-541.
- Knight, M. L., & Borden, R. J. (1979). Autonomic and affective reactions of high and low socially-anxious individuals awaiting public performance. Psychophysiology, 16, 209-213.
- Kohut, H. (1977). The Restoration of the Self. New York: International Universities Press.
- Kohut, H., & Wolf, S. (1978). The disorders of the self and their treatment: An outline. International Journal of Psychoanalysis, 59, 413-425.
- Kondas, O. (1967). Reduction of examination anxiety and "stage-fright" by group desensitization and relaxation. Behavioral Research and Therapy, 5, 275-281.
- Lankton, S. R., & Lankton, C. H. (1983). The Answer Within: A Clinical Framework of Ericksonian Hypnotherapy. New York: Brunner/Mazel.
- Lent, R. W., Russell, R. K., & Zamostny, K. P. (1981). Comparison of cue-controlled desensitization, rational restructuring, and a credible placebo in the treatment of speech anxiety. Journal of Consulting and Clinical Psychology, 49, 608-610.
- Lewis, H. B. (1971). Shame and Guilt in Neurosis. New York: International Universities Press.
- Liszt, F. (1926). The Gypsy in Music. London: William Reeves.
- Lund, D. R. (1972). A comparative study of three therapeutic techniques in the modification of anxiety behavior in instrumental music performance. (Doctoral dissertation, Utah University, 1972). Dissertation Abstracts International, 33, 1189A.
- Maclean, P. (1965). New findings relevant to the evolution of psychosexual functions of the brain. In J. Money (Ed.), Sex research: New Developments. New York: Holt, Rhinehart & Winston.
- Mahler, M., Pine, F., & Bergman, A. (1975). The Psychological Birth of the Human Infant. New York: Basic Books.
- Masters, W. H., & Johnson, V. E. (1970). Human Sexual Inadequacy. Boston: Little, Brown.

- Mayman, M. (1974). The shame experience, the shame dynamic, and shame personalities in psychotherapy (presented at the George Klein Memorial Luncheon, APA Annual Meeting, September, 1974, unpublished). Cited in Gabbard, G. (1979). Stage fright. International Journal of Psychoanalysis, 60, 383-392.
- McReynolds, P. (1976). Assimilation and anxiety. In M. Zuckerman & C. D. Spielberger (Eds.), Emotions and Anxiety: New Concepts, Methods, and Applications. New York: John Wiley and Sons.
- Mellgren, A. (1976). Hypnosis and artistic creation. Journal of the American Society of Psychosomatic Dentistry and Medicine, 23, 133-135.
- Morley, T. (1965). Conditioning of appropriate behavior to anxiety producing stimuli: Hypnotherapy of a stage fright case. The American Journal of Clinical Hypnosis, 8, 117-121.
- Naruse, G. (1965). The hypnotic treatment of stage fright in champion athletes. The International Journal of Clinical and Experimental Hypnosis, 13, 63-70.
- Neftel, K. A., Adler, R. H., Kappeli, L., Rossi, M., Dolder, M., Kaser, H. E., Bruggesser, H. H., & Vorkauf, H. (1982). Stage fright in musicians: A model illustrating the effect of beta blockers. Psychosomatic Medicine, 44, 461-469.
- Nideffer, R. M. (1976). The Inner Athlete. New York: T. Y. Crowell.
- Nideffer, R. M. (1977). Test of Attentional and Interpersonal Style Manual. San Diego, CA: Enhanced Performance Associates.
- Nideffer, R. M., & Hessler, N. D. (1978). Controlling performance anxiety. College Music Symposium, 18, 146-153.
- O'brien, R. M., Cooley, L. E., Ciotti, J., & Henninger, K. M. (1981). Augmentation of systematic desensitization of snake phobia through posthypnotic dream suggestion. The American Journal of Clinical Hypnosis, 23, 231-238.
- Paul, G. L. (1966). Insight Vs. Desensitization in Psychotherapy. Stanford, CA: Stanford University Press.
- Phillipson, H. (1955). The Object Relations Technique. London: Tavistock Publications, Ltd.
- Rinsley, D. (1980). The developmental etiology of borderline and narcissistic disorders. Bulletin of the Menninger Clinic, 44, 127-134.

- Sakata, K. I., & Anderson, J. P. (1970). The effects of posthypnotic suggestion on test performance. The International Journal of Clinical and Experimental Hypnosis, 18, 61-71.
- Schmidt, R. A. (1982). Motor Learning and Control. Champaign, IL: Human Kinetics Publishers.
- Sobel, D. (1979, November 20). For stage fright, a remedy proposed. The New York Times, p. 61.
- Spielberger, C. D. (1971). Trait-state anxiety and motor behavior. Journal of Motor Behavior, 3, 256-279.
- Spielberger, C. D., Anton, W. D., & Bedell, J. (1976). The nature and treatment of test anxiety. In M. Zuckerman & C. D. Spielberger (Eds.), Emotions and Anxiety: New Concepts, Methods, and Applications. New York: John Wiley & Sons.
- Speilberger, C. D., Gorsuch, R., & Lushene, R. (1970). State-Trait Anxiety Inventory Manual. Palo Alto, CA: Consulting Psychologists Press.
- Stanton, H. E. (1978). A simple hypnotic technique to reduce anxiety. Australian Journal of Clinical and Experimental Hypnosis, 13, 35-38.
- Tosi, D. J., Howard, L., & Gwynne, P. H. (1982). The treatment of anxiety neurosis through rational stage directed hypnotherapy: A cognitive experiential perspective. Psychotherapy: Theory, Research, and Practice, 19, 95-101.
- Wardle, A. (1975). Behavioral modification by reciprocal inhibition of instrumental music performance anxiety. In C. Madsen (Ed.), Research in Music Behavior. New York: Teachers College Press.
- Watkins, J. G. (1971). The affect bridge: A hypnoanalytic technique. International Journal of Clinical and Experimental Hypnosis, 19, 21-27.
- Wolfe, R. L. (1977). A comparison of self-versus therapist-administered biofeedback relaxation training and desensitization. (Doctoral dissertation, University of Rochester, 1976). Dissertation Abstracts International, 38B, 923B-924B.
- Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to to rapidity of habit-formation. Journal of Comparative Neurology of Psychology, 18, 459-482.

APPENDIXES

APPENDIX A

MODIFIED STATE-TRAIT ANXIETY INVENTORY FORM Y-1

- | | | | | |
|--|---|---------|---|---|
| 1. I feel calm. | 1 | 2 | 3 | 4 |
| 2. I feel secure. | 1 | 2, etc. | * | |
| 3. I am tense. | | | | |
| 4. I feel strained. | | | | |
| 5. I feel at ease. | | | | |
| 6. I feel upset. | | | | |
| 7. I am presently worrying over possible misfortunes. | | | | |
| 8. I feel satisfied. | | | | |
| 9. I feel frightened. | | | | |
| 10. I feel comfortable. | | | | |
| 11. I feel self-confident. | | | | |
| 12. I feel nervous. | | | | |
| 13. I am jittery. | | | | |
| 14. I feel indecisive. | | | | |
| 15. I am relaxed. | | | | |
| 16. I feel content. | | | | |
| 17. I am worried. | | | | |
| 18. I feel confused. | | | | |
| 19. I feel steady. | | | | |
| 20. I feel pleasant. | | | | |
| **21. I am looking forward to performing. | | | | |
| **22. I feel that my physical health is poor. | | | | |
| **23. I think I will play well today. | | | | |
| **24. I have the feeling that today my specific technical weaknesses will not bother me. | | | | |
| **25. Right now, I am in possession of an ideal muscle tone in my arms and hands. | | | | |
| **26. I'm not sure whether I will be in possession of my usual ability today. | | | | |

- * 1 - Not at all
 2 - Somewhat
 3 - Moderately so
 4 - Very much so

** Items added to STAI form Y-1

Items 1, 2, 5, 8, 10, 11, 15, 16, 19, 20, 21, 23, 24, and 25 are scored in reverse order.

APPENDIX B

RATER FORM

Student No. _____ Rater _____ Date _____

Knees tremble	Not at all	1	2	3	4	5	Very much so
Hands tremble		1	2	3	4	5	
Lifts shoulders		1	2	3	4	5	
Stiff back and neck		1	2	3	4	5	
Stiff arms		1	2	3	4	5	
Face deadpan		1	2	3	4	5	
Moistens lips		1	2	3	4	5	

Touch	Very poor	1	2	3	4	5	6	7	8	9	10	Excellent
Phrasing		1	2	3	4	5	6	7	8	9	10	
Pitch		1	2	3	4	5	6	7	8	9	10	
Rhythm		1	2	3	4	5	6	7	8	9	10	
Tempo		1	2	3	4	5	6	7	8	9	10	
Dynamics		1	2	3	4	5	6	7	8	9	10	
Memory		1	2	3	4	5	6	7	8	9	10	
Overall effectiveness		1	2	3	4	5	6	7	8	9	10	

APPENDIX C

REPORT OF CONFIDENCE AS A PERFORMER SCALE (APPEL, 1974)

1. I look forward to an opportunity to perform in public. T F
2. My legs tremble when I reach for the pedal. T F
3. I am in constant fear of forgetting the music. T etc.
4. Audiences seem friendly when I come on stage.
5. While preparing a solo performance I am in a constant state of anxiety.
6. At the conclusion of a performance I feel that I have had a pleasant experience.
7. I dislike to use my body expressively.
8. My thoughts become jumbled and confused when I perform before an audience.
9. I have no fear of facing an audience.
10. Although I am nervous just before getting up I soon forget my fears and enjoy the experience.
11. I face the prospect of performing with complete confidence.
12. I feel that I am in complete possession of myself while performing.
13. I prefer to have the notes on the piano in case I forget the music.
14. I like to observe the reactions of the audience to my performance.
15. Although I perform well before friends I freeze on the stage.
16. I feel relaxed and comfortable while performing.
17. Although I do not enjoy performing in public I do not particularly dread it.
18. I always avoid playing solos in public if possible.
19. The faces of the audience are blurred when I look at them.
20. I feel disgusted with myself after performing before an audience.
21. I enjoy preparing for a solo performance.
22. My mind is clear when I face an audience.
23. My hands feel cold and weak before performing.
24. I perspire and tremble just before performing.
25. My posture feels strained and unnatural.
26. I am fearful and tense all the while I am performing before an audience.
27. I find the prospect of performing mildly pleasant.
28. At the conclusion of my performance I feel that I would like to continue performing.
29. I am terrified at the thought of performing before a group of people.
30. I have a feeling of alertness in facing an audience.

APPENDIX D

HUMAN SUBJECTS CONSENT FORM

This study involves research to determine the relative effectiveness of different ways of helping an individual to deal with stage fright or music performance anxiety.

Each subject in the study will be asked to participate for the duration of the school year (Fall-Spring quarters). Participation will involve both weekly sessions and performance situations. There will be approximately 20-25 weekly sessions. Each will take place in the Psychological Clinic in 227 Austin Peay Building at the University of Tennessee and will last approximately one hour. During these sessions participants will first be asked to take part in some psychological testing. This will be done in order to assist in subject selection and to help the researchers better understand each subject's music performance anxiety more fully. The tests that will be used are: The Test of Attentional and Interpersonal Style, The Object Relations Technique, The Minnesota Multiphasic Personality Inventory, The State-Trait Anxiety Inventory, and a test of hypnotizability. Once testing has been completed, the sessions will be devoted to use and evaluation of different strategies for coping with stage fright. Results of testing will be discussed with subjects, and subjects will learn about different ways of understanding stage fright and how they are affected by it. Ways of focusing one's attention and learning to relax, at times through the use of hypnosis, will be explored. All procedures are well-known and considered safe. All subjects will participate in the same procedures.

Participation in five performance situations spaced over the school year will also be required. The audience for each of these performances will be made up of the participants in the study plus members of the UT piano faculty. For each of these performances, each participant will play a memorized piece of 3 to 5 minutes in length. These performances will take place in the music building. They will provide a means for both the participants and the faculty panel to provide measures of performance anxiety.

The study is not felt to pose any significant risks to subjects. Should any problems arise during the course of the study, however, subjects should contact the project director at the numbers listed below. Subjects should also feel free to ask questions of the project director at any time.

Benefits of participation may include: increased awareness of the nature of performance anxiety and how each is affected by it, knowledge of current ways of thinking about this problem and ways of trying to cope with it, and increased control over and satisfaction with one's musical performance. The results of the study will be available to any subject who requests them after completion of the study. All personal information collected during the study will be kept in strictest

confidence, and the identities of subjects will be protected in any reports on the study.

In signing this form you are indicating a willingness to participate in the project for its duration (school year '84/'85). Your participation is strictly voluntary, however, and you are free to withdraw from the study at any time without penalty.

A limited number of subjects are needed for this study. Subjects will be selected from those volunteering to participate on the basis of testing and interviews completed during initial sessions with the project director. All volunteers will be notified of selection results shortly after meeting with the project director.

Date _____ Name _____

Thomas Plott - project director
U.T. Psychological Clinic
227 Austin Peay Building
974-2161 (Home, 525-3637)

APPENDIX E

BRIEF TREATMENT DESCRIPTIONS

Subject #1: The TAIS profile indicated that, although this individual was quite adept at narrowing attention appropriately under most conditions, a tendency to ruminate and to try to integrate a great deal of information typically led to mistakes as a result of trying to think of too many things at once. During interviews this individual repeatedly expressed the belief that successful performance requires conscious attention to all elements of the music and therefore the need for a high level of control of one's powers of concentration. ORT stories featured themes of concern about a perceived connection between security and compliance, and anger over the need to comply with the expectations of others in the absence of their recognition of the "real self." The interpersonal world was presented as rather barren--a place which offers the hope of warmth and security but a place where one must exercise great caution and therefore control in order to avoid being hurt. As a particular interpersonal situation, the recital was imagined to have almost magical powers with which to bring the performer and the audience together, if only for a brief moment. When asked, as all other subjects were when presented with the blank card of the ORT, to describe a performance situation, the response was:

It's a very dark music hall with people talking in whispers, and on the stage is a very big beautiful black piano. The lights are off on the stage. In a few minutes a pale blue light comes on on the stage, and the audience gets very quiet. They sit quietly waiting. In a few minutes a woman appears on the stage. She goes directly to the piano, sits down and plays. It's as if

she were alone in the hall and no one was there. It's very beautiful, and when she is through everything is very quiet until she gets up, and then she and the audience become one in mood. And she shares with them the joy of the performance, and she leaves.

Both MMPI and TAIS indicated that generalized or "trait" anxiety levels tended to be moderately high. It was therefore predicted that hypnotic relaxation training alone would likely have some positive effect. Individualized hypnotic treatment emphasized the reliability of unconscious control and the efficiency of relegating control of some aspects of performance to the unconscious so as to enhance the control exerted consciously. Statements made by this subject indicated that resistance to this idea remained high. Consequently use of the double bind form of communication was employed frequently. In a conversation after the final performance in the study, this subject reported an improvement in concentration. It was also reported that self-hypnosis continued to be used on occasion to enhance initial focus.

Subject #2: The TAIS profile indicated that this individual experienced great difficulty integrating many environmental stimuli, often feeling overloaded and confused as a result. Although better able to integrate ideas than external stimuli, there was also a tendency to become confused as a result of trying to think of too many things at one time. The profile indicated some emotional lability in overwhelming interpersonal situations and diminished self-concept, likely resulting from repeated failure experiences. In general this individual felt that self-control was often lacking in interpersonal situations. Again, it was correctly predicted that the calming effect of hypnotic relaxation alone would have a positive effect.

Both assessment and interview information indicated that this was an individual who tended to be rather passive and compliant. She expressed a concern about being viewed as conceited. While being comfortable with being seen as the best in a group, performance was seen as problematic in that it required one to set oneself apart from the group. There was evidence of an underlying rebelliousness which she felt threatened relationships with others, particularly with her family. ORT stories revealed a view of the world as an arena for men to be active and for women to be passive and secretive. There were concerns about competing, about asserting oneself, and about growing up and the separation from family which that entails.

Performance therefore seemed to present a situation in which basic conflicts regarding security and autonomy were evoked. Stage fright was seen here as both a result and a solution, in that it limited her ability to compete and develop as a performer. It is interesting that this was one of only two subjects who planned to teach piano exclusively. Her ORT performance description revealed the discomfort and the solution--leaving the stage to another, and not just another, but to a man:

I see the lights, the stage lights that are always so hot. I can see that there're people out there, but you can't distinguish anybody. All the lights and the attention are on the performer. He's just now walking out on stage and getting ready to sit down at the piano.

Individualized hypnotic treatment featured suggestions aimed at permitting the performance situation to be viewed less as a display of self than as an opportunity to establish contact with the audience through the music. The affect bridge technique was useful in this

regard in that the hypermnesia of her first recital and the panic associated with awareness of "the adults in the other room" provided a focus on the fundamental concern with separation.

This subject presented a recital after the end of treatment and before the follow-up measure was taken. Both she and faculty members reported that she played very well. She reported that she had been much more relaxed during the recital than during the performance situations in the study, that she had experienced considerable success in losing awareness of the audience and concentrating on the music. She also stated that she felt that the performance situations with the faculty members seated near the piano had been more anxiety provoking than the recital situation in that she had found it impossible to get the faculty members out of her awareness. This suggests the possibility that experience dealing with the focusing demands of these performance situations may have had a positive effect on the performer's ability to deal with the demands of the recital situation which are, in some respects, less difficult.

Subject #3: This subject's TAIS attentional scales profile was quite similar to that of subject #2. Again, there appeared to be difficulty, both in integrating large numbers of environmental stimuli and in limiting ideation to a manageable number of foci. A major difference was that this subject also indicated skill at narrowing focus appropriately. The problem was seen more as one of controlling this process in interpersonal situations. Interpersonal scales indicated that this was an individual who had a strong preference for spending time alone with his own thoughts, and who tended to experience

considerable anxiety in social situations in general. Particularly problematic were situations which were relatively unstructured or in which his role was not well-defined. Conversations indicated that the performance situation presented a problem in that his role as performer and his role as student came into conflict. In an effort to deal with the resulting anxiety and tendency toward scattered ideation, he had adopted a perceived susceptibility to memory lapses as a focus for his concern.

As with many of the other subjects, a basic underlying concern with assertion, with the position of the performer as separate and above the audience, was evident. Some of this comes through in one of the ORT stories:

There is a country in which there is a monarch who rules and has not been attentive to the subjects' needs. And all of the anger of the people has come to a head, and they are at the foot of the steps that lead up to the throne. He is still acting like he is in charge, but the crowd is angry and waving their fists and is about to storm the steps—even maybe to the point of killing the monarch.

Use of the affect bridge produced hypermnesia for his senior recital in high school. He associated the flushed, scattered feeling with extreme concern about being approved of by the many piano teachers in attendance, at the same time feeling resentment because he felt that three of the four pieces he was to play were much too difficult. It was suggested at that time that his preoccupation with memory lapses was a way of shifting his focus away from his anger to a less threatening concern. A few minutes after awakening from trance, he suddenly smiled broadly and said, "Sometimes what you think the problem is really isn't."

Subsequent suggestions were designed to help him structure the performance situation and work with his image of himself as a performer. As with the two subjects previously discussed, there was a reported decrease in anxiety following training in hypnotic relaxation, likely as a result of its effect on generalized social anxiety. This was the only subject, however, who participated in an educational period following relaxation treatment, and, at the end of this period, self-reported anxiety was again at baseline level. Self-reported anxiety was dramatically lower following individualized hypnotic treatment, and conversations after completion of the study confirmed that he had found it very helpful. Some increase in anxiety at follow-up suggested that continued use of trance as an aid in relaxation and focusing might be useful for him in the future.

Subject #4: This subject's TAIS attentional scales profile reflected the same tendency to be overloaded by both external and internal stimuli seen in previous subjects. There was, however, a major difference in attentional preference. Whereas previous subjects tended to be highly ideational and introspective, the TAIS indicated that this individual rarely found herself in the position of thinking of too many things at once, preferring instead to relate to the world more affectively than ideationally and relying more on external stimulation and guidance than on analytical activity. There was little involvement in the processing of or communication of ideas to others. To a great extent, it seemed that conflict between assertion of self and the maintenance of contact with others had been avoided through adoption of a relatively passive style designed to blend in with the

group and comply with others' expectations. This was the other subject who did not mention performance in plans for the future.

This subject experienced a substantial increase in performance anxiety during the baseline period. This was her last year as a student, and conversations provided evidence that performance anxiety was associated with her growing anticipation of life without the structure of the academic program and without membership in the familiar group. This was the only subject whose self-reported anxiety showed a decrease at the end of the educational period and then an increase after hypnotic relaxation training. One way of understanding this is in terms of the contrast between her affective style and the more ideational styles of the others. If one looks at treatment as providing something in which the individual is deficient, then it makes sense that the addition of an ideational framework for understanding her stage fright experience would be helpful. Conversely, one would expect a more ideational person to benefit more from a procedure which enhances awareness of affective experience. When asked at the end of the study if she could point to anything that had been particularly helpful, she said, "Things you told me about myself helped."

Use of the affect bridge produced hypermnesia, first for playing for a new piano teacher for the first time, and then for her first visit to a doctor's office. What she remembered most about that experience was the coolness, the detachment of the nurses and the coldness of the instruments. The performance for the piano teacher had evoked the affect associated with the previous cold examination. Upon

awakening she associated these memories with the affect evoked by examination by a "faceless audience." Subsequent suggestions emphasized the capacity of performance to enhance the emotional bond between audience and performer through the nonverbal communication for which music is a powerful medium. It was suggested that the image of faces enthralled by the beauty of the music would replace the image of the faceless audience.

Subject #5: TAIS attentional scales indicated that this person had a slight tendency to try to think of too many things at once, but other than that he was in excellent control of his attentional processes, being able to deal effectively with many environmental stimuli or narrow his focus as the situation demanded. This was a highly ideational individual who was comfortable with tasks requiring the processing of a great deal of information. And unlike most of the other subjects, he felt that he was in fairly good control of most interpersonal situations. What was striking in the record, therefore, was the contrast between this high level of competence and the evidence of a rather negative self-image on both the TAIS and the MMPI. Tests suggested an individual much more comfortable alone than in a group, and, although analytically adept, more likely to ruminate and worry about things to the detriment of efficient decision making and action.

ORT stories further suggested that, in contrast with subject #4 for example, the significance of successful performance lay primarily in its effect of allaying concerns about self. This was someone whose thoughts tended to be creative and rather idiosyncratic, and was accompanied by a feeling of alienation and a concern about being

different. Performing well was a way of proving to himself that "different" is better. Consequently, this individual's career as a performer was very important to him. More than for any other subject, stage fright seemed to be related highly to the importance of the particular performance. Much of this was evident in his ORT performance description:

The concert hall is full. There's chatter, laughing. There's coughing, sneezing as the hall begins to fill up. The performer is backstage with nerves: He's about to scream. This is his big moment. He has been chosen as a winner of a major competition and is about to make his debut with this orchestra. He feels that this performance is the breaking point of his career. As the concert proceeds and is finished, it all goes very well. The experience was an enjoyable experience, and yet he could not understand why he was so nervous if it was so enjoyable. That's enough.

The use of the common tactic of dealing with competence concerns by viewing the audience in a disparaging way was also evident. Given both the relative effectiveness vis-a-vis performance and the dynamic importance of the existing defenses, it was decided that hypnosis would be used strictly to enhance concentration and sense of control. At one point during the individualized hypnotic treatment and in the context of a discussion of automatic control, he reported having had the experience of playing the first piece in a recital, in effect, in trance. He had been so panic-stricken that it had not been until midway through the second piece that he began to experience any conscious control over what he was doing. Upon listening to a recording of the recital, he had realized that he had had no memory of playing the first piece. In fact, he had had difficulty believing that the recording was of his performance, until he began to successfully associate to the recording during the second piece. What was most

surprising to him was that both he and most of those who had commented on the performance had felt that the performance of the first piece had been the best on the program. This experience was used to demonstrate the effectiveness and reliability of automatic control.

Unfortunately, this subject dropped out of the study after the performance following the individualized hypnotic treatment. He was also absent at the performance following the hypnotic relaxation training. In terms of personality characteristics as measured by the TAIS, MMPI, and ORT, this subject was most similar to subject #1. Comparison of the two self-report graphs shows virtually identical slopes from the performance after the baseline period to the performance after individualized treatment. In that respect, subject #5's data supports a conclusion of treatment effectiveness. That the same slope is evident from the first performance to the second, however, suggests that acclimation to the performance situation may have been a factor. He also played a recital which reportedly went very well around the time of the third performance--the one which he missed. And consequently, it could be argued that the relative absence of anxiety in the following performance could have been affected by the success of the recital and an associated boost in self-esteem. This was the only subject who played a recital during treatment, and therefore the data from other subjects is considered free of this possible effect.

Subject #6: As with most of the other subjects, TAIS attentional scales indicated difficulty adequately integrating both information and ideas resulting in a tendency to feel overloaded by both external and

internal stimuli. In addition there was evidence of difficulty shifting from external to internal focus appropriately, with anxiety resulting from the confusion. In connection with this, it is interesting that he reported during a discussion of automatic control that he had played a concerto sometime before and had found that the attentional demands of that situation had seemed to preclude the usually confusing internal focus. In other words, because he had had to concentrate on the conductor and the orchestra, he could not attend to his own playing in the usual way. He had found the experience to be quite pleasurable and felt that he had played very well.

TAIS interpersonal scales again indicated the lack of self-confidence and sense of being in control that has characterized this group. Also apparent both here and in the MMPI was a discomfort with self-assertion--a tendency to be passive rather than risk confrontation. In that performance set him apart from the crowd, it became problematic. In general, assertion of one's interests or individuality was seen as likely to result in exclusion. One ORT story went like this:

A group of guys have gotten together and are having a good time, except that one of them isn't interested in what they're doing and is wishing that he wasn't with them, but somewhere else doing something else. So he stands alone from the crowd, but there is nothing he can do about it.

There was such a concern for attachment to others that the loneliness of the performer seemed very disturbing, suggesting that pleasure in the concerto situation might not be attainable in solo performance. Not surprisingly, his ORT performance description featured a vicarious dyadic situation:

I have just arrived at a concert hall, and the concert is a famous pianist I have been looking forward to hearing. The hall has just been darkened, and the stage lights are up, and there is a gorgeous piano sitting alone on the stage. I am sitting and anticipating what he's feeling and what he might be doing, and I'm again looking at the piano and imagining how it would seem if I was backstage and I was this artist. The artist walks out, sits down and delivers a beautiful recital, and I don't wonder anymore about what he was feeling or thinking. I feel satisfied.

As with subject #3, fear of memory slips emerged as the figural concern in our discussions. And as with subject #3, use of the affect bridge resulted in hypermnesia for his first recital. He recalled that he had "screwed up," that he had had several memory lapses. After this group recital he had been surrounded by sympathetic well-wishers, receiving more attention and congratulations than those who had not struggled. The possibility that screwing up remained as part of a strategy for maintaining contact with others was further supported by the fact that this was the only experience in trance for which there was no posthypnotic memory.

This was the only subject who reported experiencing no decrease in anxiety following the individualized treatment. Anxiety did decrease during the period of training in self-hypnosis, however, leaving open the possibility of a progressive integration of suggestions, one of which was that he would not need to "screw up" in order to insure acceptance. He did not perform after the follow-up period, because he had a recital the next day. But he did report later that the recital had gone very well, that he had felt relaxed, and that he had found the occasional use of self-hypnosis helpful in relaxing and focusing his attention.

Subject #7: The TAIS attentional scales profile indicated no weaknesses in capacity to integrate either external or internal stimuli. It did indicate, however, that although this individual could successfully narrow attention, there was a tendency to narrow attention too much. People with such profiles often lack flexibility: They stick to the same way of doing things because they have difficulty in broadening their focus enough to see a general picture. The profile of scores on the interpersonal scales was quite similar to that of subject #6, particularly with respect to degree of introversion and passivity. It is worth noting, therefore, that their two ORT performance descriptions were nearly identical:

This looks like a stage, a very brightly lit-up stage. There's a piano up there. It's very dramatic, and I'm not going to be playing it. I'm going to be sitting out in the audience. It's very dark, and the stage is very bright. I'm part of an audience and we're all waiting with lots of anticipation because we know how it feels to have to walk onto stage and play. Then the performer comes out to play. It's a pianist. And he plays a recital for us, and it's very good. Afterwards all that's left onstage is the piano, and the audience leaves, and they're satisfied. They enjoyed what they heard. And then they cut off the lights, and the stage is not bright anymore. And it's dark, and you can't see the piano or the seats in the auditorium.

The MMPI profile indicated that, although likely to be rather passive in interpersonal interaction, this person resisted conforming and likely was seen by others as somewhat oppositional. Self-esteem was quite high, particularly in contrast with other members of this group as reflected in the TAIS self-esteem scale, and there was a concern with maintaining distance—with protecting oneself against intrusion or interference. She responded to another ORT card in this way:

This is somebody's house, and there're three people, and some men are talking and drinking coffee or something. And then there's one person. He's not listening. He's looking off into another room. There's a red lamp above his head. This man looks like he's kind of distressed. They're real wrapped up in a conversation. This man that's standing alone is probably going to leave because he's not very interested in what's going on. He's more interested in that room.

This person's tendency to narrow attentional focus to an extreme extent was seen as a way in which she could tune others out. She gave a recital near the end of the year, and it was reported by members of the audience that she had played well, but that the sound had gotten smaller as the performance progressed, as if she were withdrawing from the audience and playing only for herself. She reported that she had felt "flat," like she couldn't "get up" for the performance.

This subject felt very little performance anxiety at any time during the year. She reported that she only experienced anxiety if she made a mistake, at that point becoming more aware of the presence of the audience. This can be seen as an example of someone whose characteristic defense against an underlying anxiety was highly effective. The problem for her as a performer, however, was that this excessive narrowing of attention resulted in rigidity and in difficulty communicating with an audience. She alluded to some awareness of this when questioned about her interest in the study, a question prompted by the low levels of anxiety she reported initially.

Treatment was directed at enabling her to broaden attention, both by learning to relax through hypnosis and by experiencing the attentional flexibility inherent in trance, which is, itself, a state of narrowed attention. An effort was also made to help her extend her

success in controlling depth of trance to control arousal level. She was not available for discussion of her response to this after her participation in the study had ended. Although the lack of change in self-reported anxiety, and the direction of change for that matter, can be seen as evidence of treatment failure, it is possible that some control over arousal and therefore some enhancement of the energy brought to performance may have resulted without a corresponding increase in anxiety. It is considered likely, however, that relaxation of the accustomed use of such an effective defense may require a more exploratory approach, one aimed less at enhancing control than in helping the individual feel secure in the absence of rigid control.

APPENDIX F

TAIS GROUP MEANS AND STANDARD DEVIATIONS

	<u>Stage Fright Subjects</u>		<u>Eastman Students *</u>	
	N = 7		N = 64	
	Mean age = 24.7		Mean age = 18.4	
	<u>$\bar{X}$</u>	<u>S.D.</u>	<u>$\bar{X}$</u>	<u>S.D.</u>
BET	12.4	3.7	13.8	3.4
OET	20.4	4.6	17.5	5.1
BIT	16.7	4.7	19.8	4.2
OIT	16.7	2.3	15.8	4.6
NAR	27.3	2.8	25.1	5.3
RED	27.1	2.3	25.5	5.9
INFP	41.4	8.1	43.4	8.2
BCON	18.6	3.2	21.1	5.7
CON	36.0	5.1	43.3	6.9
SES	19.6	4.8	21.6	6.1
P/O	7.6	1.7	12.5	5.3
OBS	15.3	1.8	14.0	3.4
EXT	23.6	3.6	26.8	7.2
INT	26.3	3.9	24.7	4.6
IEX	15.6	3.5	17.9	4.2
NAE	9.4	4.9	13.1	4.4
PAE	20.0	2.7	20.2	4.5

* from Nideffer (1977)

VITA

Thomas M. Plott was born in Owosso, Michigan on April 4, 1950. Shortly thereafter, his family moved to Davidson, North Carolina, where he attended elementary school. He was graduated from North Mecklenburg High School in 1968. The following September he entered Williams College, from which he received a BA in psychology in June of 1972. Following two years of naval service, he returned to Davidson, where he worked for four years as cabinetmaker and shop supervisor for an organbuilding firm. He worked for a year as a research associate at Broughton Hospital in Morganton, North Carolina, after which, in the fall of 1981, he entered graduate school at the University of Tennessee, where he has been working on a Ph.D. in Clinical Psychology.