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The Effects of Performance Anxiety Management Training on Musicians' Self-Efficacy, State Anxiety and Musical Performance Quality

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THE EFFECTS OF PERFORMANCE ANXIETY MANAGEMENT TRAINING
ON MUSICIANS' SELF-EFFICACY, STATE ANXIETY AND
MUSICAL PERFORMANCE QUALITY

by

Nancy Barnes Mansberger

A Thesis
Submitted to the
Faculty of the Graduate College
in partial fulfillment of the
requirements for the
Degree of Master of Music
School of Music

Western Michigan University
Kalamazoo, Michigan
December 1988

THE EFFECTS OF PERFORMANCE ANXIETY MANAGEMENT TRAINING
ON MUSICIANS' SELF-EFFICACY, STATE ANXIETY, AND
MUSICAL PERFORMANCE QUALITY

Nancy Barnes Mansberger, M. M.

Western Michigan University, 1988.

The purpose of this study was to investigate the effects of Performance Anxiety Management Training (PAMT) on levels of perceived self-efficacy, state anxiety, and performance quality of undergraduate musicians performing under stressful conditions. Nineteen undergraduate music majors were selected for this study. Ten received PAMT, and nine--received no treatment. Subjects were tested immediately prior to a stressful evaluative performance jury on self-assessed measures of self-efficacy and state anxiety. Adjudicating music faculty determined subjects' level of performance quality. Analysis of variance revealed that subjects in the PAMT group had significantly higher scores on measures of self-efficacy, and significantly lower scores on measures of state anxiety. No significant difference was found between groups on measures of musical performance quality.

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Nancy Barnes Mansberger

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CHAPTER I

INTRODUCTION

The demands inherent in musical performance call for high levels of skill: the musician must simultaneously be in control of the finest sort of motor functions, have a trustworthy memory, and be able to perform the music expressively to an often knowledgeable and judgmental audience.

The musician's investment in his performance often is high. His reputation, career and sense of self-worth may be powerfully affected by the outcome. The risk of staking these essentials on performance places the musician in a challenged, and potentially vulnerable, position.

Public performance is therefore often stressful, and that stress can initiate a chain of intense physiological and psychological responses within the performer. Minutes before a recital, musicians often experience what has been described as the "fight or flight" syndrome: the body "girds up" for a potential battle by elevating its production of adrenaline and catecholamines, which increase respiration and heart rates. Secondary

symptoms may include nervous perspiration, "dry mouth," shortness of breath, and body tremors. These physical reactions can seriously interfere with the performer's motor control and concentration, in turn creating an additional source of stress, and feelings of distress.

The combined effect of these factors increases the likelihood of further physiological arousal, and a "spiral of anxiety" may be created. This pattern of response is characterized by increasing levels of physiological arousal and cognitive/emotional distress. Not surprisingly, it may lead to a seriously debilitated performance.

The adverse effects of such a negative arousal response can itself be a potent conditioner for the performer. For the most severely afflicted, this spiraling pattern of anxiety is triggered automatically upon the first physiological response to performance stress. Though most do not experience the severity of reaction described above, it is the rare musician who has not occasionally suffered some degree of impairment due to anxiety. For many musicians, the act of musical performance becomes linked with feelings of fear and trepidation.

Though the pervasive phenomenon of performance anxiety has long been of concern to those in the field of music,

research on the topic is fairly recent. Musicians' responses to stress, and effect of these responses on performance, is not yet fully understood. "Stress" is a stimulus involving pressure or strain upon a person, which precipitates a response, or pattern of response. "Anxiety" refers to a host of physical and psychological responses experienced by a person placed in a stressful position. Its specificity as a term is complicated by its common usage, which generally describes the feelings of fear and worry invoked by the anticipation and occurrence of stress. Though these feelings may certainly be involved, the response to stress entails more subtle and complex factors.

Researchers have identified three components of subjective response to stress: (1) physiological responses (heart rate, respiration, and other autonomic system indicators); (2) cognitive responses (subjective thoughts and feelings); and, (3) behavioral responses (mannerisms and motor control). The presence of a state of anxiety is determined by an increase in the level and type of response in one or more of the component response systems. For instance, in reference to the "spiral of anxiety," it may be surmised that the performer's heart rate became elevated (physiological response); the performer was emotionally distressed and distracted

(cognitive/emotional response); and performance errors and nervous mannerisms were observable (behavioral response). Though any one of these measurements may indicate an anxious response, the synchrony of all three indicates an acute, debilitating response to stress.

However, there is much variety in the type and level of each response for individuals under similar performance conditions. How these variable patterns of response affect performance quality is the prime focus of this study.

Studies that compare musicians' responses to low-stress and high-stress conditions (for example, private practice to public performance) clearly show the correlation between indicators of anxiety and stress. The increased pressure of public performance significantly correlates with increased levels of physiological arousal (Craske & Craig, 1984; Leglar, 1978; Liden & Gottfries, 1974) and self-assessed state anxiety (a measure of subjective perception of transitory anxiety) (Craske & Craig, 1984; Hamann, 1984; Hamann & Sobaje, 1983). Increased levels of anxiety have also been shown to significantly correlate with decreased levels of performance (Craske & Craig, 1984; Leglar, 1978; Liden & Gottfries, 1974).

Conversely, there is evidence that anxious arousal

may, in many cases, facilitate performance quality. In studies designed to examine the effects of self-assessed state anxiety on performance, higher levels of performance quality significantly correlated with increased state anxiety for competent musicians (Hamann, 1984; Hamann & Sobaje, 1983).

This finding was supported partially by Craske & Craig (1984), who found performance quality improved for "Relatively Non-anxious" musicians in increased-stress conditions. Yet, when compared to musicians identified as "Relatively Anxious," interesting differences in response were found. Though the stressful condition invoked nearly identical levels of increased heart rate, dissimilar effects were seen on performance: performance quality improved under stressful conditions for the non-anxious subjects, while it declined for anxious subjects.

Scores on cognitive/emotional response measures also differed. Though both groups experienced a significant rise in self-assessed state anxiety, levels on measures of state anxiety and subjective distress were significantly higher for the anxious musicians in stressful conditions.

Studies (Bandura, 1977; Bandura, 1982; Craske & Craig, 1984; Kendrick, Craig, & Lawson, 1982) have shown that

highly performance-anxious persons are low in self-efficacy (a term used to describe an individual's beliefs about his ability to perform a given task (Bandura, 1977)). For example, Sarason (1980), lists the characteristic cognitive responses to stress of a highly anxious person:

1. The situation is seen as difficult, challenging, and threatening.
2. The individual sees himself as ineffective, or inadequate, in handling the task at hand.
3. The individual focuses on undesirable consequences of personal inadequacy.
4. Self-deprecatory preoccupations are strong and interfere, or compete, with task-relevant cognitive activity.
5. The individual expects and anticipates failure and loss of regard by others. (p. 28).

These characteristic cognitive responses can become a long-term, self-defeating pattern when linked with the stress of evaluative performances. Preoccupied with fear of failure, performers focus on what is going on inside them, and become diverted from the step-by-step approach needed in solving problems (Sarason, 1980). For the musician, the most basic problem is how to control a possibly debilitating physical reaction without distraction from the high level of concentration required for competent and expressive performance. A secondary,

but very important, problem is how to be free from the stressful and counterproductive self-cognitions typically associated with low self-efficacy. Subjects who experienced debilitating responses were found to have significantly lower levels of self-efficacy in both low-stress and high-stress performance conditions (Craske & Craig, 1984). In comparison to these anxious subjects, whose levels of self-efficacy substantially dropped in the highly stressful performance, "Relatively Non-anxious" subjects' levels of self-efficacy actually rose in the stressful condition. Therefore, it can be surmised that it is the strength and nature (positive or negative) of the cognitive response pattern, as indicated by levels of self-efficacy, that differentiates the facilitative and debilitating anxiety responses.

Increased percepts of self-efficacy lower the amount of "self inflicted" stress felt to be responsible for the distraction and debilitation of the performer. By reducing this internal source of stress, the total amount of stress is reduced and results in a lowered cognitive anxiety response. As Bandura (1982) puts it: "Self-perceptions of efficacy influence thought patterns, actions and emotional arousal. In causal tests, the higher the level of induced self-efficacy, the higher the performance accomplishments, and the lower the emotional

arousal" (p. 125).

However, performers' patterns of anxiety response are very strong, having been ingrained by the nature of repeated performance experiences. Though the cognitive response is influential on the nature of the combined response pattern, therapies that exclusively address the restructuring of cognitive responses have been only partially successful in changing subjects' debilitating response pattern (Appel, 1976; Kendrick et al., 1982; Sweeney & Horan, 1982).

As noted before, there is evidence that negative cognitive response is more closely correlated to physiological arousal for subjects with debilitating anxiety than for subjects with facilitative anxiety (Bandura, Reese & Adams, 1982; Craske & Craig, 1984), and that self-efficacy is a good predictor of cognitive response. These relationships point to the desirability of addressing both cognitive and physiological responses when designing anxiety management therapies. Indeed, therapies that address both have proven superior in reducing debilitating anxiety, when compared to those designed to affect only one response system (Kendrick et al., 1982; Sweeney & Horan, 1982; Wardle, 1974).

When interventions are successful in reducing debilitating arousal patterns of subjects, there is a

commensurate increase in self-efficacy as they observe the correlation between their problem solving and increased success in performance. (Bandura, 1977). This rise of self-efficacy is thought, in turn, to further decrease the incidence and stressful effect of self-defeating cognitive responses.

As success in anxiety management skills improves, the musician is increasingly freed to focus on the technical and expressive requirements of performance. Persons with high levels of self-efficacy are believed to concentrate more attention and effort toward fulfilling the demands of performance (Bandura, 1982). This improved performance capacity provides powerful feedback that enhances positive cognitive response to stress, and percepts of self-efficacy. It is the positive cognitive response, as measured by higher levels of self-efficacy, that appears to facilitate performance.

The findings above clearly state the desirability of anxiety management methodologies that promote performer's percepts of self-efficacy. Performance Anxiety Management Training (PAMT) is a methodology specifically designed to alter the nature of the response for musicians with debilitating anxiety. It is designed to break debilitating response patterns by actively re-teaching a new arousal response, while it enhances percepts of

self-efficacy. PAMT actively teaches a new, self managed, facilitative response to performance stress for musicians. The purpose of this study was to investigate the effects of Performance Anxiety Management Training on levels of perceived self-efficacy and self-assessed state anxiety for musicians under stressful performance conditions.

The Statement of the Problem

This study examined the effects of Performance Anxiety Management Training (PAMT) on self-assessed state anxiety, perceived self-efficacy, and musical performance quality for undergraduate music students in a highly stressful musical performance setting. More specifically, it sought to determine the effects of PAMT on those variables by comparing scores for two groups: one receiving PAMT, and a no-contact control group.

The Subproblems

The First Subproblem

The first subproblem was to compare mean scores of both groups prior to conditions of temporary stress on the Self-Assessed Subjective Anxiety Statement (SASAS), a measure of state anxiety.

The Second Subproblem

The second subproblem was to compare mean scores of both groups on two related pretest measures of Perceived Self-Efficacy, in order to assess perceptions of subjective competence.

The Third Subproblem

The third subproblem was to compare mean scores of both groups on measures of Performance Quality, designed to evaluate subjects' degree of successful performance outcome.

The Delimitations

The subjects in this study were limited to students enrolled full-time as music majors in the School of Music at Western Michigan University, Kalamazoo. Caution should be observed when generalizing the results of this study to dissimilar populations.

The Definition of Terms

Anxiety: The physiological and psychological responses experienced by a person in a stressful situation.

Trait anxiety: An individual's characteristic level of anxiety under "normal" conditions (Hamann & Sobaje, 1983).

State anxiety: A transitory state consisting of subjective feelings of tension, worry, and fear, and heightened activity of the autonomic system (Spielberger, 1979).

Stress: A stimulus involving external or internal strain upon a person, which precipitates specific responses, or patterns of response.

Self-efficacy: A person's perceptions, or confidence, concerning his ability to perform a specific task.

Assumptions

It was expected the tools used for measurement of the three dependent variables adequately measured the effects for which they were designed. It was further expected that no adverse side effects would occur in either group as a result of participation in this study. It was also assumed that juried performance examinations are inherently stressful situations, and would be most likely to provoke the subjects' characteristic arousal responses.

The Importance of the Study

Some degree of performance anxiety is experienced by all musicians at all levels of proficiency, from amateur

to professional. There is considerable documentation regarding the disastrous effects of debilitating performance anxiety on the performance quality of highly skilled musicians (Appel, 1976; Brantigan, Brantigan & Joseph, 1978; Leglar, 1978; Sweeney & Horan, 1982), and, persuasive evidence that frequent episodes of performance anxiety may discourage further musical study by the performer (Appel, 1976; Sweeney & Horan, 1982).

Yet many anxiety treatments do not adequately address the unique problems inherent in musical performance anxiety. Research on anxiety has primarily focused on phobic anxiety, wherein afflicted persons actively seek to avoid the source of fear. Though these studies have produced valuable insights, the application of these findings to the study of performance anxiety have been somewhat problematical. Musicians cannot avoid stressful performances, but rather must endeavor to cope with it, despite whatever response they experience. By the nature of the profession, musicians must "choose" to perform, despite their feelings of anxiety. Though the "fight or flight" syndrome may serve man well in times of danger, it can debilitate the musician who finds it is himself that he must battle.

CHAPTER II

REVIEW OF RELATED LITERATURE

Anxiety is a complex reaction to external or internal (self-perceived) stressful stimuli. It entails a host of physical and psychological responses experienced by a person placed in a stressful situation. Researchers (e.g., Lang, 1971) have identified three separate, but related, response systems, and their area of effect: (1) physiological (heart rate, respiration, and other autonomic indicators, (2) cognitive/emotional (thoughts and feelings), and, (3) behavioral (motor functions, mannerisms and performance quality). States of anxiety are related to the level of response in one or more of the component systems.

Despite years of research on anxiety, researchers do not agree completely on the factors that precipitate anxiety, or on the pattern of interaction between the component responses that affects performance quality. However, it seems apparent that individuals with debilitating anxiety get caught in a "spiral of anxiety," fed by increasingly heightened reactions of each system. Typically, when an acute state of anxiety is present, there is a increased response (or, arousal)

in all three channels: heightened heart rate, respiration, or Galvanic Skin Response (physiological response); negative self-statements, feelings of fear (cognitive response); and, nervous mannerisms, increased performance errors (behavioral response). It is this synchronous pattern of interaction between the three response systems which characterizes the stressful state in a highly anxious subject.

Though sources of anxiety-provoking stress vary for each person in each situation, public performance has a demonstrable affect on performers. It has been shown that in public performance, musicians experience a physiological arousal (Craske & Craig, 1984; Leglar, 1978; Liden & Gottfries, 1974). Many therapists assume that these heightened autonomic responses provide feedback that triggers feelings of fear, and that the reduction of physiological responses will favorably affect the cognitive and behavioral channels of reaction (Appel, 1976; Bandura, 1977; Sweeney & Horan, 1982; Wardle, 1974).

Wolpe (1958) developed a therapy of systematic desensitization. He described it as the breaking down of neurotic anxiety response habits by inducing a state (progressive deep muscle relaxation (Jacobsen, 1938)) within the person that is incompatible with the

heightened physiological arousal typically connected with the anxiety response. The classic desensitization procedure consists of three phases: the client first learns deep muscle relaxation, a physiological state "opposite" to one associated with anxiety. Next, the therapist assists the client in the construction of "anxiety hierarchies," a graded progression of anxiety-provoking mental imageries associated with specific stressful conditions. Last, the hierarchical imageries are evoked in graded order while the client is in the relaxed state. That is, starting with the least stressful imagery, subsequent scenes are not ~~presented~~ until the client can maintain relaxation throughout each level's imagery. By this process, typical physiological reactions to stress stimuli are replaced through counter-conditioning with a state of relaxation.

Systematic desensitization has been the subject of extensive research, and has found acceptance for effectively treating a wide variety of anxieties. However, it has been found that the spectrum of coping skills thus developed is most effective for treating extremely specific phobias. This may limit the usefulness of this therapy for musical performance anxiety, due to the diverse performance conditions faced by musicians.

Not surprisingly, members of the medical field have also been interested in the role of the physiological response system in anxiety. It is known that in stress situations the catecholamine output in the body can be raised to such a level as to cause palpitation, increased muscular tensions, and tremor (Brantigan et al., 1978; Brantigan et al., 1982; Liden & Gottfries, 1974). Secondary symptoms such as headache, cold hands, and nervous perspiration are not directly catecholamine-induced, but are thought to be induced by reaction to the awareness of the primary symptoms. When musicians known to suffer from severe performance anxiety have been treated with a drug that blocks catecholamine output (beta blockade), e.g., propranolol hydrochloride, the absolute severity of symptoms drops dramatically (Brantigan et al., 1978, 1982; James, Pearson, Griffith, & Newbury, 1977; Johnson, Singh & Leeman, 1976; Liden & Gottfries, 1974). Heightened physiological response and visible anxiety behaviors are practically extinguished, and performance quality is frequently improved (Brantigan et al., 1978, 1980; Liden & Gottfries, 1974).

For some musicians treated by beta-blockade, performance quality has been lowered due to unexplained "psychological problems" (Brantigan et al., 1978). Treatment by beta-blockade induces reductions of

cognitive/emotional responses to stress indirectly, if at all. Little is known about the type and effect of cognitive responses in the absence of physiological arousal, under stressful performance conditions. There is still much argument, in the light of evidence that the response to stress may facilitate performance, on the desirability of drastically reducing physiological arousal. Many musicians-perhaps the majority-experience significantly improved performance under stressful conditions. In studies designed to examine the effects of self-assessed state anxiety on performance, higher levels of performance quality correlated significantly with increased state anxiety for competent musicians in public performance (Hamann, 1984, 1982; Hamann & Sobaje, 1983).

This finding was supported partially by Craske & Craig (1984) who found performance quality improved significantly, and levels of state anxiety lower, in public performances of musicians identified as "relatively non-anxious." However, this study revealed a more complex picture of interactions. When comparing the effects between a low-stress and a high-stress performance condition on "relatively anxious" and "relatively non-anxious" subjects, it was found that performance quality was debilitated in anxious subjects

in the stressful condition. Though both groups recorded near-identical levels of physiological arousal, levels of state anxiety were significantly higher for the anxious musicians.

Additional tests for cognitive anxiety revealed a significant difference between groups. Anxious musicians were afflicted both by a high level of negative self-perceptions and a significantly reduced level of self-efficacy (the amount of confidence one feels in one's ability to perform successfully) under the high-stress condition. This was in sharp contrast to the nonanxious musicians, whose levels of negative self-statement did not rise significantly, and who actually experienced a rise in self-efficacy under the stressful condition. Therefore, it may be surmised that the cognitive response to stress mediates or determines whether physiological arousal facilitates or debilitates performance.

The role of patterns of thought as mediators of problematic behavior has prompted the development of such cognitive/behavioral therapies as attentional training, insight-discussion, and cognitive restructuring. These therapies are based on evidence that self-verbalizations can increase or decrease anxious reaction (Ellis, 1962, 1964; Rimm & Litvak, 1969), and are geared toward

changing the type and nature of self-cognitions (self-perceptions). Such therapies attempt to identify the negative and irrational counterproductive thought processes that occur when subjects are anxious, and substitute for them positive self-statements by means of discussion and verbal modeling techniques.

Cognitive intervention treatments such as these have been found to be very effective in reducing negative thoughts and behavioral signs of anxiety (Sweeney & Horan, 1982). However, results for performing competence, state anxiety and self-efficacy ratings have been mixed. In only one study (Kendrick et al., 1982) was anxiety reduced, self-efficacy raised, and musical performance competence improved in debilitatively anxious musicians, after cognitive restructuring therapy. Despite the face logic of dealing with cognitions directly in order to reduce anxiety and improve self-efficacy, specifically cognition-based therapies have not proven clearly effective.

Though subjects may make behavioral changes before experiencing reduction in cognitive distress (Lick & Katlin, 1976), it is generally felt that therapeutic interventions are only effective to the degree that they alter self-efficacy (Bandura, 1977; Miechenbaum, 1971; Kendrick et al., 1982). Self-efficacy is a component of

the cognitive response system, and correlates significantly with perceptions of stress, cognitive/emotional responses to arousal, and performance outcome (Appel, 1976; Bandura, 1977; Craske & Craig, 1984; Kendrick et al., 1982), and is an an integral mediator of the performing experience. Indeed, studies using therapies addressed to both the cognitive and physiological response systems have shown that a clear benefit results when both systems are addressed. Subjects experienced greater anxiety reduction, enhanced positive self-cognitions, and improved performance (Altmaier, 1982; Daley, Bloom, Deffenbacher, & Stewart 1983; Sweeney & Horan, 1982; Wardle, 1974).

In Bandura's (1977) theory of self-efficacy, he states that expectations of personal efficacy are based on four major sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological state (or emotional arousal). Bandura theorized that the greater the diversity of "mode of induction"--the more broad a base of treatments a therapy draws on--the greater the increase of induced self-efficacy in subjects. He further states: "Performance-based treatments not only promote behavioral accomplishments, but also extinguish fear arousal, thus authenticating self-efficacy through enactive and

arousal sources of information" (p. 182).

Appel (1976) enhanced systematic desensitization therapy by coupling it with a traditional performance anxiety treatment, i.e., performance rehearsal. In addition to graded anxiety hierarchies in conjunction with relaxation techniques, rehearsals in front of others were used as a stress inoculation. Compared to a second traditional musical anxiety treatment [musical analysis, which attempts to focus the performer's attention at a high level on the piece being performed], systematic desensitization with performance rehearsal significantly improved performance quality for "anxious" musicians. Significant reductions in pulse rates and increased self-efficacy scores also corresponded with this result. These positive results may be due to the additional sources of efficacy-building information. According to Bandura's self-efficacy theory, use of performance rehearsal in therapy induces efficacy enhancement through the "performance accomplishment" and "vicarious experience" modes of induction, in addition to the "emotional arousal" mode through which desensitization is thought to act.

In the search for a treatment for music performance anxiety, the desirability of a therapy involving all four sources of efficacy induction becomes evident. One such

therapy is Performance Anxiety Management Training (PAMT). PAMT is based on Anxiety Management Training (AMT) (Suinn & Richardson, 1971). PAMT differs from systematic desensitization, in that it seeks to replace the "normal" anxiety hierarchy with a combination of three separate imagined scenes: (1) a highly anxiety-arousing performance scene (2) a highly satisfactory performance scene, and (3) a relaxation scene. After being trained in deep-muscle relaxation, utilizing the relaxation scene, the subject is then asked to imagine his anxiety-provoking scene and to monitor his physical reaction. After a minute or two, the subject is directed to relax. Next, the subject is directed to imagine a successful performance, again monitoring his physical response. This process is repeated until the situational cues of stress-invoked arousal come to elicit relaxation, or serve as cues for the active coping skill.

AMT has been shown to be more effective than desensitization in producing generalized coping skills (Deffenbacher & Shelton, 1978). The use of graded hierarchies in desensitization promotes subjective anxiety reduction in highly specific and limited situations, through gradual, therapist-induced exposure to specific adverse stimuli. On the other hand, AMT encourages subjects to actively re-learn and manage their

own responses to stress by use of the three disparate imageries. In follow-up studies, subjects have shown an improvement in anxiety-control skills that generalized to additional areas of experience (Deffenbacher & Shelton, 1978; Suinn, 1976; Suinn & Richardson, 1971).

PAMT employs the standard therapeutic techniques described above, with the addition of performance rehearsal. By this latter addition, efficacy enhancement may be induced through all four sources of efficacy information: verbal persuasion, physiological arousal, vicarious experience, and performance accomplishments.

CHAPTER III

METHOD

The Subjects

The subjects in this study were full-time undergraduate students, majoring in music at the School of Music at Western Michigan University, Kalamazoo, during the 1986 Winter Semester. The criteria for selection were:

- (1) Subjects must be at least eighteen years of age.
- (2) Subjects must give informed consent.
- (3) Subjects must be scheduled to perform a juried performance examination for the 1986 Winter Semester.

The initial number of subjects who volunteered for the study was 21, and represented various majors, instrumental focus, and class levels. After group assignments, one subject from each group was released from the final performance examination requirement, and was therefore dropped from the study. This left a total number 19 subjects; ten in the Performance Anxiety Management Training group (PAMT), and nine in the No Contact/Control (NC/C) group. A total of seven males and twelve females participated in the study; three males

and seven females in the PAMT group, and four males and five females in the C/C group.

The Setting

Western Michigan University is located in a Mid-western city of moderate size, i.e., Kalamazoo, population, 77,000. The on-campus student population of Western Michigan University at the time of the study was approximately 19,000 persons. Of these, approximately 300 are enrolled in the School of Music as music majors.

The Measurement Instruments

The instrument used to collect data on subjects' state anxiety was derived from the Subjective Anxiety Scale (Wolpe, 1958), first used for clinical purposes to estimate response to fear-provoking stimuli. Wolpe's original, one-question scale used the number 100 to describe the "worst imaginable fear" and the number one to describe "absolute calm," and it appears to measure, adequately and reliably, psycho-physiological, as well as subjective, aspects of anxiety (Meyer, Sharpe, Liddel, & Lyons, 1975; Tasto, 1977; Lipinski, Black, Nelson, Ciminero, 1975).

The instrument used in this study, the Self-Assessed State Anxiety Scale (SASAS) (Mansberger, 1988), was

constructed by substituting a seven-point field response scale in place of Wolpe's original 100 point scale in order to facilitate comparisons between measures. The number "one" was to indicate "Totally Calm," and the number "seven" for "Panicked." Subjects were asked to assess their degree of perceived anxiety by marking a location on the scale.

Two scales were developed for this study by the researcher to measure perceived self-efficacy, or the subjects' beliefs about their ability to perform successfully. The first assessed how well-prepared the subjects felt for their upcoming performance (Level), while the second measured the Strength of that prediction. In regard to Strength, weak expectations are easily extinguishable under adverse conditions, whereas stronger expectations lead individuals to persevere in coping behavior (Bandura, 1977).

The two measures used in this study, Level of Perceived Self-Efficacy (PSEL) and Strength of Perceived Self-Efficacy (PSES), utilized a seven-point response field. Subjects were asked to assess their level of preparation by marking a number on the scale, with the number one being "totally unprepared," and seven, "completely prepared." For PSES, subjects were again asked to mark a number on the scale to indicate their expectations for successful performance, with "extremely

poor" as one and "excellently" as seven. The PSEL and PSES scales were given as a pretest measure only.

A third facet of Self-efficacy, Generality, is also commonly included to assess the scope of expectations, because a generalized sense of efficacy frequently extends to tasks outside of testing situations. But since both treatment and performance conditions in this study were specific to one task (a juried performance), generality was not measured.

Performance Quality (PQ) was assessed by faculty judges who listened to the students' juried performance given at the end of the term. For this study, each judge was presented with a simple seven-point assessment scale on which to mark each subject's "Overall Performance Quality" (PQ). It was felt this adequately reflected the traditional, all-encompassing letter grade, and would compensate for the diversity of factors involved in judging performances on a variety of musical instruments. On the scale, the number one was labeled "Extremely Poor", and seven, "Superior". Judges' performance quality scores for each subject were then combined into one mean score for analysis. Judges were "blind" to the treatment groups, and had no knowledge of which students received the Performance Anxiety Management Training.

Procedure

Administrative Design

This study was granted approval by the Western Michigan University Human Subjects Review Board in February, 1986. Permission to conduct the study at the School of Music was granted by the chairperson of the School of Music.

Performance Anxiety Management Training (PAMT)

Typically, relaxation-based anxiety treatment groups meet in six to eight 60-minute weekly sessions (Appel, 1976; Daley et al., 1983; Sweeney & Horan, 1982). Due to difficulties in the recruitment of a sufficient number of volunteers, treatment sessions were compressed into three, 90-minute weekly sessions.

PAMT sessions were led by a registered Music Therapist with previous experience in training subjects in deep-muscle relaxation. The therapist was prepared by the study of available research on Anxiety Management Training (Daley et al., 1983; Deffenbacher & Shelton, 1978), and was assisted by the researcher in adaptation of the therapy to the specific experience of musical performance anxiety.

Session 1

Subjects, including the therapist, sat in a semi-circle on the floor of the studio. In the first ten minutes, the subjects were given a conceptual overview of PAMT that included its purpose and major premises. Subjects were also given a verbal explanation of the therapeutic techniques to be learned.

Subjects were next asked to share personal experiences of performance anxiety, and to describe psychological and physiological reactions. Typical physiological reactions mentioned were dry mouth, troubled breathing, nausea, "racing" pulse, and sweaty palms. Psychological responses described were wandering thoughts, defeatist statements, and fears of failure. The third exercise in this session involved the development of anxiety and success invoking scenes for visualization portions of the therapy. Subjects were asked to visualize a performance jury, noting the physical lay-out of the room, the people in the audience, and to imagine themselves going through the steps of performance. Subjects were asked to notice, in particular, at what steps they felt anxious and which physical reactions were experienced.

Subjects were again asked to visualize a performance, this time with a successful, or pleasurable, outcome. Subjects were asked to notice the different psychological perceptions and physical reactions felt when performing competently. Subjects were told to retain these scenes

for later use in the therapy.

Before beginning deep-muscle relaxation, subjects were directed to imagine a third scene. Subjects were asked to think of a place in which they felt totally relaxed, again noting details of the environment, and their physical/emotional responses to feelings of relaxation. The last exercise in Session I was deep-muscle relaxation training. The techniques followed those outlined by Okun (Okun, 1982, pp. 164-166). Subjects lay on the floor with eyes closed, and the room was darkened. After a short introduction to the purpose of deep-muscle relaxation, subjects were then led through a number of exercises designed to teach conscious relaxation. Before leaving, subjects were reminded to bring their musical instruments for next week's session.

Session 2

The second session began with the same relaxation exercise taught in Session I. After practicing the technique, subjects were led in a visualization exercise while still in their "relaxed" positions. The subjects were asked by the therapist to invoke a specific scene generated in Session I. Subjects practiced feeling anxious, relaxed, and successful, aided by their personal visualizations and therapist directions. For each visualization, subjects were instructed to allow

themselves to fully experience the events they imagined, noting their varying physio-emotional reactions and perceptions. This exercise was based on AMT sessions described by Deffenbacher and Shelton (1978).

The second half of Session II involved behavior rehearsal. Before performing, subjects were asked to stand or sit quietly, visualizing their "success" scenes. After scanning their music and identifying trouble spots, they were instructed to focus on their breathing and to relax, utilizing their "relaxation" scenes, if necessary. At the point they felt mentally and physically prepared, they were directed to concentrate on the music and begin to play. Throughout their performance, subjects were encouraged to stop when feeling anxious, relax muscles, and visualize success, before continuing. All subjects were requested to be supportive of the individual performing. A short discussion of the subjects' experiences ended Session II.

Session III

Session III closely followed the format of Session II, with the addition of a five-minute musical warm-up before performance. The last fifteen minutes were spent in a "closure" discussion. The therapist stressed to the subjects that the techniques learned in therapy could prevent an ever-increasing "spiral of anxiety"; yet, as a

newly learned response, subjects would need to continue practicing the techniques for effectiveness. Subjects were asked to share their feelings about the therapy before departing.

No Contact/Control Group

Subjects placed in the NC/C group were contacted individually by the researcher. The importance of their participation was stressed, and an explanation of their role was given. Directions concerning the testing procedure were also provided at this time.

Collection of Data

Immediately prior to each juried performance, subjects in both groups were given a packet containing pretest measures of anxiety, perceived self-efficacy, and the Perceived Stress Index. Subjects were instructed to fill out the pre-performance measures while waiting to perform. Members of the adjudicating panel were presented with measures designed to assess the performance quality of the subjects. All assessment forms were then returned to the researcher for analysis.

CHAPTER IV

RESULTS

The descriptive and inferential statistics regarding the analysis of data gathered in the study are presented in this section. To compare treatment's effect on subjects levels of perceived self-efficacy, anxiety, and evaluated performance quality, means and standard deviations on all measures were computed, and are shown in Table 1 together with the levels of significance for the comparisons.

Table 1

Means (standard deviations) of dependent measures
for PAMT and control groups.

Measure	PAMT (n=10)		NC/C (n=9)		p
	Mean	(SD)	Mean	(SD)	
PSEL	5.45	(0.83)	4.22	(1.48)	.03
PSES	5.00	(0.81)	3.83	(1.06)	.02
SASAS	4.45	(0.68)	5.27	(0.90)	.04
PQ	4.20	(0.62)	4.08	(0.41)	NS

As Table 1 shows, the PAMT group attained significantly higher scores on Perceived Self-Efficacy Level (PSEL), $F [1,17] = 5.11$; Perceived Self-Efficacy Strength (PSES), $F [1,17] = 7.31$; and SASAS, $F[1,17] = 5.12$. No significant difference was found between groups on measures of performance quality.

CHAPTER V

DISCUSSION

The results in this study show that, under stressful performance conditions, subjects who underwent Performance Anxiety Management Training (PAMT) (1) had significantly higher levels of perceived self-efficacy, and (2) had significantly lower levels of subjective state anxiety than subjects in a No Contact/Control (NC/C) group, but (3) did not perform significantly different than subjects in the control group.

Anxiety reduction is thought to enhance performance quality by raising self-efficacy expectations, which in turn determine the degree of effort and persistence on the part of the subject in handling a stressful situation. Though many studies have shown a clear correlation between high levels of self-efficacy, lowered levels of subjective anxiety, and higher performance quality, these are not the only determinants of performance outcome. For example, one may be highly confident and relaxed, yet perform unsatisfactorily, when not sufficiently challenged by performance conditions (Bandura, 1982). In other words, arousal (or, response to higher amounts of stress) has a motivational property

that can positively or negatively affect performance, depending on the prior acquisition of correct habit response (or, task mastery (Hamann & Sobaje, 1983)). This is supported by studies showing that highly trained musicians experience far greater improvement in performance under stressful conditions than less-skilled musicians, when both are compared to their performances under low-stress conditions (Brantigan, et. al., 1982; Craske & Craig, 1984; Hamann & Sobaje, 1983).

Implications for Professional Musicians

Skill is, of course, a major factor in the quality of performance outcome. It has been suggested that self-efficacy is highly related to competence (Rachman, 1978). A ceiling effect is evident in several studies, wherein the most highly trained musicians had more confidence in their ability to perform and superior performance success, when compared to musicians with low to medium years of training, despite considerable levels of subjective state anxiety (Appel, 1976; Craske & Craig, 1984; Kendrick et al., 1982; Sweeney & Horan, 1982). In other words, high levels of ability, which are associated with high levels of self-efficacy, tend to override the debilitating effects of anxiety on performance quality.

Despite the obvious strength of skill mastery and experience, professional musicians are not invulnerable to performance stress. It has been shown that professional musicians may experience significantly more stress response than college musicians (Brantigan et al., 1982). Though musicians may develop a tolerance to induced stress, as do those involved in car racing or sky diving, for example, debilitating responses can appear at any point in their career (Appel, 1976; Brantigan, et al., 1982; Neftel et al., 1982).

Debilitating response patterns of highly trained musicians have been differentiated into two sources, somatic anxiety and neurotic anxiety (Brantigan et al., 1982). Somatic anxiety is defined as a disability arising from the symptoms of physiological arousal, which affect motor control and concentration and cause emotional distress. Neurotic anxiety describes a condition of inappropriately heightened fear and worry felt by the performer before a performance, which initiates physiological arousal. Neurotic anxiety may cause, and be caused by, episodes of somatic anxiety (Brantigan et al., 1982).

This worry about one's ability to cope with the distracting effects of somatic anxiety is a large factor of debilitating anxiety. Stress often stems more from

perceived coping inefficacy than from the properties of the task itself (Bandura, Reese & Adams, 1981).

Studies involved with beta-blockade, wherein symptoms of physiological arousal are extinguished, show this to be a highly effective treatment for those affected by episodes of somatic anxiety. Beta-blockade may also be useful for occasional, unusually stressful performances such as auditions or solo concerts. However, the effects of beta-blockade are not as successful for those performers with neurotic anxiety response patterns, as it has no direct effect on subjective perceptions (Neftel et al., 1982). For that reason, it is felt that these musicians would best be served by a re-training program such as PAMT, in order to unlearn the self-defeating cognitions on performance and self that are thought to be responsible for debilitated performance (Brantigan, et. al., 1982; Neftel et al., 1982).

Implications for Professional Training

Levels of subjective state anxiety have been found to be negatively related to years of study (Hamann & Sobaje, 1982). Musicians with medium years (6-10) and low years (1-5) of training report successively greater amount of state anxiety. Common practices in musical training may

reinforce such negative responses, causing anxiety to become inextricably linked to the mystique of performance. T. A. Brantigan (1982) describes how current teaching practices may affect students' perceptions of performance:

"Traditional musical training coerces the neophyte musician into repeated high pressure performance situations for which he is relatively unprepared. The aspiring musician begins his training by auditioning before a highly critical audience to gain admission. . . His musical training experience is characterized by frequent, relatively unpolished performances of music before juries made up of overly critical professors. Negative feedback is common. Such training not only teaches musical performance, but also actually cultivates the stage fright response. To the musician, two elements, performance and anxiety, are paired so often that when one appears, the other invariably follows." (p.92).

A prevailing attitude of performance instructors seems to be "If one can't stand the heat, get out of the kitchen." But, in the light of research, this attitude is unwarranted. If severe anxiety was a criterion for exclusion from a musical career, the world would have been denied the enrichment of some of its greatest artists. Vladimir Horowitz, Arthur Rubenstein, and Pablo Casals are some musicians who have admitted to extreme emotional performance distress (Brantigan et al., 1982). It seems apparent that, in order to be at one's personal peak of performance, in order to be free to express the

full spectrum of one's artistic conception, one needs to be liberated from the constraint of self-defeating emotions and cognitions. Therefore, evidence of anxiety in students should not be taken lightly, nor treated as a sign of weakness.

Total extinction of the anxiety response is probably not desirable, even if it were possible. There is ample reason to assume that moderate arousal has a beneficial, motivational effect on performers (Craske & Craig, 1984; Hamann, 1984, 1982; Hamann & Sobaje, 1983). Anxiety is a normal survival reaction of heightened awareness and reponse when one is at risk. And performance places a musician in a very vulnerable position. One must expose how much one cares, and how hard one has tried; showing not only technical competence, but also revealing the depth of one's intellectual and emotional investment. This tremendous risk causes anxiety responses to be an inherent component of musical performance.

Musical performance demands preparation. Competent and promising musicians need a thorough education that includes learning about all aspects of performance, and that fosters positive perceptions about the performing experience. Learning positive percepts of self-efficacy will lead to increased effort and persistence in mastering challenges, and will promote the facilitative

cognitions that enable problem-solving to occur in performance (Bandura, 1977).

Teachers can enhance the attainment of immediate performance skills for their students through the use of practices and findings described in this study. In addition, understanding that the student's normal anxiety may foster debilitating stress response patterns that can affect long-term performance success, gives importance to addressing this aspect of performance. Each lesson and rehearsal offers an opportunity to practice and teach performance skills through behavior modeling, discussion of anxiety responses and their effects; perhaps even visualization. Performance rehearsal with a small, supportive audience is also thought desirable. Creating a positive environment for performance, demonstrating proficient ways of handling threatening situations, and giving evaluations that emphasize positive aspects of performance will allow the student to develop the perceptions of self-efficacy that facilitate performance success.

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