A Review of the Approaches to the Management of Tension and Stage Fright in Music Performance

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There is considerable evidence that stage fright, like all other forms of anxiety, is multifaceted. In addition to partially independent somatic, cognitive, and behavioral manifestations, stage fright seems to comprise fear of fear, fear of social disapproval, problems with distraction, and a judgmental attitude. Each form of stage fright may be best treatable by a specific intervention. Relaxation therapies and drug therapy seem to target somatic symptoms, although drug therapies may have greater potential for side effects, including some that are deleterious to performance. Some studies of such interventions do exist, but there is little knowledge of long-term effects of medication, or of interactions between medication and various psychological approaches to managing somatic manifestations of stage fright. Several approaches to cognitive intervention for stage fright have been proposed, and two empirical studies suggest that they are effective. Behavioral interventions and frequent performance experience are commonly used and may have considerable beneficial effect on stage fright, but these have not as yet been empirically evaluated.

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A Review of the Approaches to the Management of Tension and Stage Fright in Music Performance

Anyone who chooses a career as a professional performing artist knows that the management of physical and emotional tension will occupy center stage during at least some phases of his or her professional career. The management of physical and emotional tension involves the mastery of intricate skills. Some of these skills are inextricably connected to instrumental technique (Gerig, 1974), while others can be taught relatively independently.

Although the problem of tension in performance has been discussed throughout the ages, it only recently has become an issue for widespread systematic concern. Recent interdisciplinary conferences on the topic have

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been held in London, Princeton (New Jersey), New York, Denver, and Aspen (Colorado) and have involved professionals from the fields of music performance and education, psychology, physiology, and medicine. In the summer of 1985, three such conferences took place in the New York–New Jersey area within a single month. There is now an International Society for the Study of Tension in Performance based in London. It holds yearly meetings and frequent workshops throughout the world, and it publishes the *Journal of the International Society for the Study of Tension in Performance.* A second journal on the subject, *Medical Problems of Performing Artists,* has recently commenced publication in the United States. Articles on the subject appear in increasing numbers in music education journals and even in the popular press.

Performance Anxiety and its Treatment

Much evidence has been gathered to date showing that anxiety has several different forms, each of which might best be managed in a unique way. Lang (1971) found that physiological, cognitive, and behavioral manifestations of anxiety often do not correlate highly with each other. When snake phobic subjects were placed in a long room with a caged snake at the end of it and were asked to pick it up and play with it, those individuals who said that they were the most anxious were not necessarily the ones who stayed the farthest away from the snake, and neither of these were necessarily the individuals who showed the greatest increases in heart rate or palmar sweating. Some subjects responded in only one of these ways, others in more than one. Each of these patterns seemed to represent a different kind of anxiety.

Craske and Craig (1984) similarly found very low correlations among physiological, cognitive, and behavioral measures of anxiety among nonanxious pianists during a performance. However, the correlations among these measures in anxious pianists were much higher.

Goldman and Lehrer (1986) reported finding a number of independent dimensions of self-reported manifestations of stage fright. The independence of these dimensions was ascertained by means of a principal components analysis (Harris, 1975). These dimensions included (1) fear of fear, (2) fear of disapproval by important others, (3) problems with concentration and distraction, and (4) a judgmental attitude toward problems in performance.

There is considerable evidence that various kinds of stage fright might each best be treated by a specific kind of intervention. In a study of music students with stage fright, Appel (1976) found that special training in musical analysis tended to decrease the number of errors a performer made during a performance while the psychological antiphobia technique of systematic desensitization (Wolpe, 1958) did not. Desensitization, on the other hand, reduced self-reported anxiety during the performance more than did training in musical analysis. Similarly, Brantigan, Brantigan, and Joseph (1979a, b) found that the beta-blocker drug propranolol decreased tremors and other physiological accompaniments of stage fright, but had much more modest effects on self-reported feelings of anxiety. No one has as yet done a formal evaluation of the combination of various anti-anxiety techniques on stage fright.

Craske and Craig's findings, mentioned above, suggest that individuals suffering from severe stage fright must be treated by a combination of methods because of the greater variety of their symptoms.

Physiological problems and treatments

No one needs to tell performers about the physiological symptoms of stage fright. Usually these result from the "fight or flight" reflex, which is normally elicited during anxiety or stress. The fight-flight reflex was designed by nature to mobilize the body for attacking or fleeing enemies and surviving in the wilderness. Perspiring helped the individual to climb trees and run faster. Diminished blood flow to the periphery (which produces cold hands) and to the gastrointestinal tract (which can lead to indigestion) allows a greater blood supply to the large muscles. Increased muscle tension may form a "body armor" for protection against assault. The increase in sensitivity to small noises or movements might help the individual to locate a hidden enemy. Although these responses may be useful for escaping bears and fighting invaders, they can be deleterious to the very delicate and intricate motor and intellectual activity involved in music performance.

Physiological symptoms of stress appear to be effectively and specifically treated by techniques of muscle relaxation, biofeedback, and self-hypnosis (cf. Lehrer & Woolfolk, 1984). People can learn to detect very low-level muscle tension in their bodies and to relax muscles that are not needed in the performance of particular tasks. This technique, known as differential relaxation, is routinely taught by behavior therapists in the treatment of tension-related disorders (Jacobson, 1967). In piano technique, some teachers (e.g., S. Lehrer, 1983) give specific training to students in relaxing their thumb and fifth finger while other fingers are playing on the keyboard. (In some players, these fingers may stick out while playing, manifesting isometric tension that can interfere with performance.) They also teach students how to find spots in the music where they can release their muscles, how to sit, and hold their arms, legs, and fingers in such a way as to minimize isometric tension.

Irvine and LeVine (1981) and LeVine and Irvine (1984) reported studying a number of violinists and violists who, using the technique of biofeedback, were taught to play their instruments without tensing their left thumbs. They assumed that tension in that finger serves little or no purpose in playing the instrument, and that tension there can spread to other fingers and interfere with finger dexterity. Electrodes were attached to the muscles in the hand that control thumb movement, and were connected to a small machine that emitted audible signals when the individual's muscle tension exceeded a predetermined level. That level was progressively decreased as the individual learned to relax. Individuals treated in this way reported greater freedom, improved dexterity, and greater ability to control musical expressiveness. Similar findings were obtained from studies of biofeedback-assisted relaxation training to the forearm muscles in violinists (Morasky, Reynolds, & Clarke, 1981) and clarinetists (Morasky, Reynolds, & Sowell, 1983); and to facial muscles of

woodwind players (Basmajian & Newton, 1974; Evoskevich, 1979; Levee, Cohen, & Rickles, 1976). Trumpet players also can learn to reduce facial muscle tension while playing, but the effects on their performance have not been evaluated (Basmajian & White, 1973). Although the various relaxation methods do reduce muscle tension, they have not been found to reduce musical intensity of the performances (Reynolds & Morasky, 1981).

Another approach to the problem of tension-related physical problems among musicians involves the use of new kinds of prosthetic hardware. The Australian surgeon, H. Fry (1985) noticed that many clarinetists eventually develop problems in the muscles and ligaments of the right thumb. Although these problems are often diagnosed as "carpal tunnel syndrome" or "tendinitis" or "tenosynovitis" they rarely do actually involve inflammation or malformation of the tendon. They appear to be an entirely different kind of disorder. They occur much more frequently among musicians than among the general population, and the conventional surgical treatment procedures usually do not work. Fry describes these problems as "overuse disorders," which are best treated by rest and by changes in technique that take the strain off the afflicted area. He invented a post for the clarinet and oboe, which attaches to the center of the instrument and rests on the abdomen. It takes the strain off the right thumb, which otherwise bears the full weight of the instrument. These devices are now commercially available from Australia, and, Fry reports, they dramatically alleviate the right-hand problems of clarinetists.

Some forms of medication also may be helpful, although evidence for this is incomplete. Beta-blocker drugs have been widely discussed recently for the treatment of stage fright (Brantigan, Brantigan, & Joseph, 1979a, b; James, Pearson, Griffith, & Newbury, 1977; Lidèn & Gottfries, 1974). The pros and cons of using beta blockers for treating stage fright have been reviewed in detail by Lehrer, Rosen, Kostis, and Greenfield (1987), who caution against their indiscriminate use, and conclude that the liabilities of their side effects often may outweigh their benefits. The one study that examined the effect of beta blockers on subjects who actually suffered from debilitating stage fright (Brantigan et al., 1979a) found increases in self-reported anxiety in some subjects, despite a decrease in physiological arousal. Another study found significant improvements in performance after beta blockers among relatively strong players, but not among weaker ones (James, Borgoyne, & Savage, 1983). There is also some evidence that beta blockers may have deleterious effects on two aspects of excitement in musical performance, rhythmic control and dynamic intensity (James & Savage, 1984).

Certainly safer than beta blockers are a number of psychological techniques for overcoming physiological hyperarousal. They may be used in combination with beta blockers in some instances, although the interaction of psychological techniques and beta blockers has not yet been studied. These psychological techniques include progressive muscle relaxation (Jacobson, 1938), self-hypnosis (Schultz & Luthe, 1969), and some aspects of the Feldenkrais (1972) and Alexander (Barlow, 1977) methods, as well as the Eastern disciplines of yoga (Patel, 1984) and *t'ai chi*, an ancient Chinese dis-

cipline of meditative movements practiced as a system of exercises (Manching & Smith, 1967). Another anti-anxiety drug, commonly know as valium, has been found to interfere with relaxation therapy for anxiety (Lavallée et al., 1977) and with music performance (James & Savage, 1984).

Cognitive problems

Cognitive factors known to raise anxiety levels include one's reaction to lack of control (e.g., over conditions in the hall, the reactions of others, and things one's body might do), demands for an impossible level of perfection, and the perception that the stakes are high and the probability of success low (Lazarus & Folkman, 1984). The performer's profession is almost designed to maximize these factors. During music performance the body is tested to the limits of its capacity for subtle neuromuscular and mental control. A minor indisposition or even some normal physiological events, such as the physiological accompaniments of the fight-flight reflex, can have a major effect on performance. If an individual perceives his or her body to be out of control, anxiety is increased. This may then exacerbate the very symptoms that produced the anxiety in the first place–cold hands, palpitations, dry mouth, tremors, etc.

Demands for perfection are particularly problematic for musicians or actors. Compounding this problem is the fact that today's musicians can compare their own live performances with recorded performances by the greatest artists–performances that may have been dubbed and redubbed numerous times, yielding a standard of perfection that rarely is possible for anyone in a live performance. Although neurotic perfectionist tendencies can exaggerate the problem there is some basis for the perceived need for perfection. At the very least, all notes should be played in a perfectly correct sequence. Anything less will be universally judged as a fault in the performance. Also, the stakes are high in many performances, and the probability of success in a career as a performer certainly is low. Only a small percentage of conservatory graduates will ever be able to earn a living as performers. In such a buyers' market for talent, performers can lose a steady job or a chance for a concert tour because of a single bungled performance. This cannot help but raise anxiety; and even if the risk is rarely catastrophic to one's personal being or even to one's career, it becomes quite easy for some individuals to make a catastrophe of it in their minds—a common cognitive distortion among ordinarily psychologically "normal" individuals (Ellis, 1977).

Other cognitive factors also create anxiety in the performer's life. It is no paranoid delusion that colleagues and members of the audience pass judgment on everything one does in performance. Indeed, one's musical shortcomings occasionally are written up in the next day's newspaper in uncomfortable detail by a hostile critic. It takes a thick skin and considerable psychological stability and training to remain oblivious to such social pressure.

Most musicians learn to deal with such problems through informal discussions with friends, colleagues, teachers, and coaches. Treatments for severe

manifestations of such problems can include counseling, psychotherapy and cognitive therapies that focus on helping people recognize irrational and self-defeating thought patterns. The aim is to help separate one's sense of personal self-worth from the judgments of other individuals. In her book on managing the stage fright of violinists, Havas (1973) suggests assuming the following mental attitudes:

1. To look on violin playing as a form of creative art instead of a technical accomplishment.
2. To exchange the concept of "good" and "bad" in violin playing for a standard of physical comfort and also to assess the degree of one's success by the ability to transmit the music to the listener.
3. To eliminate the existing teacher/pupil relationship and replace it with a "give" and "receive" musical communication.

Ristad (1982) offers a number of mental strategies for overcoming stage fright. These include learning to focus attention away from one's self and intellectual analysis of the task and toward a nonintellectual attention to various aspects of the shape, rhythm, and feeling of the music; using varieties of "paradoxical intention" techniques that involve deliberate attempts to exacerbate various problems as a method of learning to cope with them; learning to recognize the humor in various situations; arguing with oneself about the virtues of performing on stage, as a method of clarifying one's conflicting feelings about performing; and learning to analyze one's performance problems nonjudgmentally. Similar approaches have been described by Triplett (1983) and Green (1986).

Only two empirical studies of cognitive therapy for stage fright have been reported. Harris (in press) found that a cognitive therapy modeled after the work of Beck (1976) and Ellis (1962) produced significant changes in self-reported symptoms of stage fright. Whitaker (1984) reported significant effects of a multifacted treatment package on self-report (i.e., cognitive) manifestations of stage fright among piano students. Although the treatment package included taped relaxation therapy as well as cognitive therapy, no significant differences were found in skin conductance between the active treatment and a waiting list control. Although this finding appears to be contrary to the "specific effects" hypothesis proposed here, one can reasonably argue that the main thrust of her treatment was, in fact, cognitive. Although relaxation instruction is generally considered to be a physiological technique (Davidson & Schwartz, 1976), taped relaxation instruction (versus live) has generally been found to be ineffective in producing physiological effects (Lehrer, 1982).

Behavioral problems

The behavioral components of performance anxiety include technical problems that detract from performance; interpersonal problems with teachers, friends, managers, and stage hands; and a tendency for people to avoid doing the things that make them anxious, such as practicing difficult passages

and creating performance opportunities for themselves.

Workshops on assertiveness training (Alberti & Emmons, 1974) are widely available and helpful for many of these interpersonal problems. In this technique, the therapist models effective behavior in various difficult interpersonal situations and, using role-playing, coaches the client and gives supportive feedback about progress. Assertiveness training is often combined with cognitive interventions, in which the client may reexamine his or her irrational thought patterns that exacerbate anxiety, particularly those involving the need for unconditional love or approval, and the risks attached to expression of anger or other emotions.

Hamann (1982) and Hamann and Sobaje (1983), found that the longer a student has been studying an instrument, the more anxiety facilitates performance. Children who studied for six or more years tended to perform better in high-anxiety situations than in low-anxiety situations. This finding is consistent with research on phobias showing that practicing confronting fearsome situations is the most powerful method of treatment available (e.g., Marks, 1978; Mathews, Gelder, & Johnson, 1981). Hamann (1985) suggests that the critical anxiety-management ingredient in lengthy training is mastery of the task. This appears to be particularly true for people who have high "trait anxiety". These individuals experience anxiety much of the time in many situations, not just during performances. Two studies have found that when very highly anxious people are confronted with a very stressful situation (such as taking an examination), their performance in these situations improves only if they are specially skilled in the tasks required to cope with the stressful situation (Heinrich & Spielberger, 1982; Spielberger, 1971).

If experience giving many and frequent performances does impart greater skill in coping with the performance situation–as Hamann and his colleagues assume–then the experience of giving many frequent performances should be an effective treatment for stage fright. Data on other forms of anxiety do suggest that "massed practice" is helpful (Foa et al., 1980). This involves exposing oneself to an anxiety-producing situation for long periods of time daily. Massed practice of performance might involve several performances per week for a few months. In contrast, research suggests that widely spaced exposure to anxiety-provoking situations may lead to increased anxiety. This is known as the "incubation effect" (McAllister & McAllister, 1967). This phenomenon may account for the long-term persistence of stage fright in some individuals. Opportunities to perform several times per week are, for most musicians, difficult to obtain. Also there is a natural inclination to avoid doing things that produce anxiety. An individual suffering from stage fright may avoid performing because of the fear involved, thereby heightening the anxiety through the incubation effect. An optimal treatment regimen for managing stage fright might take this into account and require frequent performance.

The requirement of frequent performance does not mean that stage-frightened individuals must all be put on stage in Carnegie Hall three times per week until the fear goes away. Although such a scenario might if it were possi-

ble be beneficial for some, the most stage-fright stricken probably would simply drop out of any treatment that required it. An approach of successive approximations is therefore suggested in treating this problem, as in treating most other phobias (cf. O'Brien & Barlow, 1984). Individuals can begin by playing for just a few trusted friends in an intimate and nonthreatening environment, and gradually increase the size and formidability of the audience, as well as the formality of the surroundings. The pace at which these advances are made should ideally be matched to the individual's comfort level. Some will be able to advance to formal concerts quickly and easily, while others will not. A case study using this approach with a woman suffering from debilitating stage fright is described by Norton, MacLean, and Wachna (1978).

Although behavioral methods such as frequent performance practice have been used for centuries by music educators, it is surprising to note that no controlled empirical studies have yet been reported on behavioral treatment of stage fright.

Conclusion

This paper has pointed out a number of aspects and dimensions of performance anxiety, and has described some of the problem-specific methods that have been proposed for managing these problems. Although there is considerable evidence from the psychological literature and a few studies from the stage fright literature suggesting that symptom-specific treatments have the most powerful effect, very few studies have been done comparing various methods of treating stage fright. Although severe cases of stage fright might be expected to require treatment using combinations of several strategies, no studies have yet been done using such combinations, or comparing these to individual methods. Indeed, the effectiveness of most individual treatments have not been well researched. Although a few studies have evaluated the use of beta blockers and systematic desensitization, very little empirical investigation has been done on the various cognitive and behavioral procedures. Given the large quantity of thought and interest that has been devoted to this topic over the years, and the plethora of well-articulated treatment strategies from various quarters, it would seem that this is an important area for future research.

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