1992

The development and evaluation of a modified cognitive-behavioural treatment for musical performance anxiety

David Roland
University of Wollongong

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THE DEVELOPMENT AND EVALUATION
OF A
MODIFIED COGNITIVE-BEHAVIOURAL TREATMENT
FOR MUSICAL PERFORMANCE ANXIETY

A thesis submitted in partial fulfilment of the requirements for the award of the degree

Doctor of Philosophy (Clinical Psychology)

from

UNIVERSITY OF WOLLONGONG

by

David Roland, BSc (Hons)

Department of Psychology
1992

October 1992
Declaration

Except where otherwise indicated this thesis is all my own work

David Roland
October 1992
ACKNOWLEDGEMENTS

There have been many people who have helped out in indispensable ways in the completion of this project. Some have helped out during specific stages of the research and others have provided support throughout.

I would like to thank the staff of the Department of Creative Arts and the Conservatorium of Music, University of Wollongong for their assistance during the initial study. In particular James Powell gave enormous encouragement and administrative support. A special thank you to all the musicians who participated in the study.

I would like to thank the various music organizations who participated in the second study including the Australian Broadcasting Commission, the Australian Opera, the Sydney Symphony Orchestra, the Australian Chamber Orchestra, the Sydney Conservatorium of Music and the Canberra School of Music. Thank you to Lyn Richards who through the course of many interstate conversations explained NUDIST to me. Thank you to the individual musicians who participated in the interviews and especially for the wonderful conversations which resulted.

I would like to thank those individuals who helped in the completion of the final study including staff and students of the Canberra School of Music, with special mention of Bill Hawkey, Ric McIntyre, John Luxton, Vernon Hill and John Tucker. Other individuals from outside the School who made significant contributions included Peggy Croskey, Jenny Porteous, Bernadette Cruise and Lillian Widmeier. Jeffrey Bond and David Pyne from the Australian Institute of Sport were terrific. A special thank you to all the musicians who participated in the study.
During the course of the project I received invaluable assistance from the academic and support staff of the Department of Psychology, University of Wollongong. Linda Viney provided a special guiding role and helped to give me an objective perspective of the project. David Brown and Anne Porter spent many valuable hours sorting through statistical conundrums with me. Thank you to Yvonne Pittelkow and Bruce Shadbolt for our informal chats about the analysis. Peggy Daroesman was wonderful in applying her word processing expertise and enthusiasm to the final product.

Thank you to three notable people: Ann Brassil who gave me the initial encouragement to start the project, Loani McRae who as a close friend and musician has provided a constant source of interest in what I have been doing, and Barry McNamara who because he has been going through the same process as me has been a great source of solace.

Thank you to the special people in my life, my parents Margaret and Ted Roland, and Leah Samios for their loving.

My final and greatest appreciation goes to my supervisor Saroja Srinivasan. I consider myself to have been extremely fortunate to have had her personal and intellectual guidance in the completion of this project. She has been unfailingly wonderful.
Performance anxiety is common amongst both amateur and professional performers. It can lead to a loss of enjoyment in performance, a deterioration in the quality of that performance, or at its worst, the complete cessation of performance. In attempting to treat musical performance anxiety psychologists have concentrated on standard cognitive and behavioural treatments including progressive muscle relaxation, self-instructional training, rational emotive therapy, behaviour rehearsal and systematic desensitization. These methods have generally been shown to be effective in reducing performance anxiety.

The first preliminary study of this thesis compared the individual and combined effectiveness of progressive muscle relaxation and self-instructional training. It was concluded that the combination treatment was more effective than either of the individual treatments.

The major focus of this thesis was on modifying the standard cognitive and behavioural treatments used in previous research to make them more applicable to the musical context. In the second preliminary study, in-depth interviews with successful professional performers were conducted to determine the strategies that these performers used to manage performance anxiety. The results revealed that they adopted a diverse range of preparation strategies before performing, which successfully prevented the build-up of anxiety and allowed them to feel in control. These strategies included a variety of cognitive, behavioural, lifestyle and musical strategies.

A modified cognitive and behavioural treatment was developed based on the results of the second preliminary study. The final study compared this modified cognitive and behavioural treatment with the standard cognitive and behavioural treatment used in the first preliminary study. The results showed that both treatments were more effective than a no-treatment control. Neither was more effective than the other.

It is suggested that, in the treatment of musical performance anxiety, some of the components of the modified treatment may make useful additions to standard cognitive and behavioural treatments. In terms of future developments it is also suggested that a holistic approach to treatment which fully addresses the lifestyle context of musical performance holds the greatest promise for future empirical investigation into the treatment of musical performance anxiety.
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CHAPTER 1
THE TREATMENT OF MUSICAL PERFORMANCE ANXIETY

The Nature of Anxiety

A Brief Historical Overview of the Theories of Anxiety

Since Freud's pioneering work on the etiology, symptoms and treatment of anxiety, the subject of anxiety has remained important in clinical psychology. Freud (1959) described three categories of anxiety feelings which he saw as originating in the ego. **Realistic** anxiety developed in response to a real external threat and was not seen to be a cause of later psychological problems. **Moral** anxiety arose from ego and superego conflicts and led to feelings of shame and guilt. **Neurotic** anxiety developed from the failure of the ego's defenses to suppress primal impulses. Neurotic anxiety could lead to phobias, free-floating or generalized anxiety and panic attacks. Since Freud's early conceptualization of anxiety there have been further theoretical developments in the psychoanalytic literature; however, such psychoanalytic constructs have been resistant to empirical validation (Sweet, Giles & Young, 1987).

Another major historical conceptualization of anxiety has been behaviourism which was derived from the learning theories of Pavlov, E.L. Thorndike and B.F. Skinner. These theorists and others held the notion that anxious behaviour is acquired and reinforced through classical and operant conditioning (Sweet, Giles & Young, 1987). From this, Wolpe (1958) developed the principle of reciprocal inhibition and demonstrated how the reduction of anxiety could be achieved through progressive muscle
relaxation. He developed the treatment of systematic desensitization which has proven to be an effective behavioural treatment for some forms of anxiety. A further development in the behavioural treatment of anxiety was with the use of in vivo exposure therapy in which subjects are exposed gradually to their fear-provoking situations. Despite its successes, behaviour theory has had difficulty in accounting for a number of important observations in clinical anxiety research – for example, why some phobias are more prevalent than others and why they afflict certain sections of the population more frequently than others (Sweet, Giles & Young, 1987).

A break-away from the unitary model of anxiety implied in behaviourism was the three systems concept of anxiety proposed by Lang (1971, 1985). Lang views anxiety as comprising verbal reports of distress, fear-related behavioural acts, and visceral and somatic activation. These three systems can vary in a desynchronous fashion. As a consequence, a person experiencing anxiety has a unique set of cognitive, behavioural and physiological causes and symptoms which fully describes their experience of anxiety in a particular situation. The three systems model of anxiety has proven to be compatible with cognitive-behavioural theories of anxiety (Ellis, 1962; Mahoney, 1974; Meichenbaum, 1977; Beck & Emery, 1985). Cognitive-behaviourists emphasize the central importance of cognitions and cognitive processes in the development and maintenance of anxiety (Beidel & Turner, 1986). In the treatment of anxiety cognitive behaviourists frequently use the established behaviour therapies such as relaxation and behaviour rehearsal, in addition to placing a large emphasis on the modification of beliefs, self-statements and coping strategies (Latimer & Sweet, 1984; Beidel & Turner, 1986). The cognitive-behavioural models of anxiety appear to this author to be the most fruitful at this stage because of
their ability to account for a great variety of anxiety states, their openness to empirical verification and their well expounded treatment approaches.

The Cognitive-behavioural Model of Anxiety by Beck

Of the cognitive-behavioural models of anxiety, the one which has been described as the most comprehensively defined (Sweet, Giles & Young, 1987), is that of Beck (Beck, 1985; Beck & Emery, 1985; Clark & Beck, 1988). Beck conceives of anxiety as a primitive response to danger. Anxiety could be seen to serve a similar purpose to physical pain. When we experience a sensation of pain in our body we are alerted to give attention to this part of the body and to take action to remedy the physical harm. In an evolutionary sense, Beck suggests that anxiety may have served to alert us to danger so we can take action to deal with the danger. Such actions included the protective, reflexive responses of fight, flight, freeze and faint. As our environment has changed, however, the types of threats which we encounter today are not primarily physical in nature, but psychological. Therefore, the reflexive responses which are initially activated when we feel under psychological threat are no longer the most appropriate for dealing with the "danger".

Beck sees the primitive survival response to danger as consisting of an interplay of four systems: cognitive, behavioural, physiological and affective. The cognitive system plays a central role in initiating the response. "The cognitive or information-processing component draws on peripheral and central sensory systems to construct meaningful patterns at the perceptual level. It integrates inputs, selects an appropriate plan, and thus activates the rest of the behavioral, affective, and physiological systems." (Beck & Emery, 1985, p 187.) The affective system which indicates
the subjective experience of anxiety supports action by creating a sense of urgency. The behavioural system consists of a variety of motor patterns which are serviced by the autonomic components of the physiological system. The two autonomic components comprise the energetic sympathetic system and the anergic parasympathetic system. The sympathetic system initiates the active strategies fight, flight and freeze, the last being brought about by inhibition of action through voluntary muscle action. The parasympathetic system initiates the fainting response when the person perceives themselves to be totally defenceless.

Beck's model describes two self-protective mechanisms: (1) the fast acting primal reflexive response network which causes the automatic, stereotypic strategies of fight, flight, freeze and faint, (2) the slower acting voluntary contingent network using more complete information processing and strategy selection in determining the response to threat. Both mechanisms are activated congruently (see Figure 1.1).
Beck's cognitive model of threat response (adapted from Emery & Tracy, 1987).

**Primal, Reflexive Inhibitory Network**
- Instant Reaction
- Automatic, Stereotypic Strategies

**COGNITIVE SYSTEM**
- Makes selective appraisals of the environment
- Determines level of perceived danger
- Assesses available coping resources
- Sets into motion sequence of affective, physiological, and behavioural components

**PHYSIOLOGICAL SYSTEM**
- Instigates automatic reflex manoeuvres including:
  - Discrete reflexes
  - Complex reflexive behavioural sets
  - Generates energetic (sympathetic) and anergic (parasympathetic) reactions
  - Generates unpleasant subjective, somatic and visceral sensations of anxiety

**Anxiety Contingent (Reduction) Network**
- Slower Reaction Time
- Conscious, Selected Strategies

**EMOTIONAL SYSTEM**
- Produces experience of conscious, subjective sensation of anxiety, panic, etc.
- Forces attention to the dangerous situation
- Stimulates, instigates conscious formulations of counterharm strategies

**BEHAVIOURAL SYSTEM**
- Produces series of behavioural strategies, including:
  - Reflexive behaviours (fight, flight, freeze, faint)
  - Voluntary behaviours (consciously enacted strategies) that result in an intermix of automatic and volitional counterharm responses
Beck argues that in an objectively dangerous situation a person's perception is often a realistic appraisal of the threat and their consequent anxiety is appropriate. In pathological anxiety the perception of danger is unrealistic, with the person overestimating the danger involved. Beck believes that overestimates of the danger arise from one or more of four errors listed below:

1. Overestimating the probability of a feared event.
2. Overestimating the severity of the feared event.
3. Underestimating coping resources (what you can do about it).
4. Underestimating rescue factors (what other people can do to help you).

Beck (Beck & Emery, 1985) outlines the typical symptoms experienced in the four systems of anxiety (see Tables 1.1, 1.2, 1.3, and 1.4).

Table 1.1  
*Cognitive Symptoms in Anxiety Disorders* (Adapted from Beck & Emery, 1985)

<table>
<thead>
<tr>
<th>Sensory-Perceptual</th>
<th>Thinking Difficulties</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Mind&quot;: hazy, cloudy, foggy, dazed</td>
<td>Can't recall important things</td>
</tr>
<tr>
<td>Objects seem blurred/distant</td>
<td>Confused</td>
</tr>
<tr>
<td>Environment seems different/unreal</td>
<td>Unable to control thinking</td>
</tr>
<tr>
<td>Feeling of unreality</td>
<td>Difficulty in concentration</td>
</tr>
<tr>
<td>Self-conscious</td>
<td>Distractibility</td>
</tr>
<tr>
<td>Hypervigilant</td>
<td>Blocking</td>
</tr>
<tr>
<td></td>
<td>Difficulty in reasoning</td>
</tr>
<tr>
<td></td>
<td>Loss of objectivity and perspective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conceptual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive distortion</td>
</tr>
<tr>
<td>Fear of losing control</td>
</tr>
<tr>
<td>Fear of not being able to cope</td>
</tr>
<tr>
<td>Fear of physical injury/death</td>
</tr>
<tr>
<td>Fear of mental disorder</td>
</tr>
<tr>
<td>Fear of negative evaluations</td>
</tr>
<tr>
<td>Frightening visual images</td>
</tr>
<tr>
<td>Repetitive fearful ideation</td>
</tr>
</tbody>
</table>
Table 1.2
Affective Symptoms in Anxiety Disorders (adapted from Beck & Emery, 1985)

<table>
<thead>
<tr>
<th>Affective Symptoms</th>
<th>Affective Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgy</td>
<td>Fearful</td>
</tr>
<tr>
<td>Impatient</td>
<td>Scared</td>
</tr>
<tr>
<td>Uneasy</td>
<td>Frightened</td>
</tr>
<tr>
<td>Nervous</td>
<td>Alarmed</td>
</tr>
<tr>
<td>Tense</td>
<td>Terrified</td>
</tr>
<tr>
<td>Wound-up</td>
<td>Jittery</td>
</tr>
<tr>
<td>Anxious</td>
<td>Jumpy</td>
</tr>
</tbody>
</table>

Table 1.3
Behavioural Symptoms in Anxiety Disorders (adapted from Beck & Emery, 1985)

<table>
<thead>
<tr>
<th>Behavioural Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhibition</td>
</tr>
<tr>
<td>Tonic immobility</td>
</tr>
<tr>
<td>Flight</td>
</tr>
<tr>
<td>Avoidance</td>
</tr>
<tr>
<td>Speech dysfluency</td>
</tr>
<tr>
<td>Impaired co-ordination</td>
</tr>
<tr>
<td>Restlessness</td>
</tr>
<tr>
<td>Postural collapse</td>
</tr>
<tr>
<td>Hyperventilation</td>
</tr>
</tbody>
</table>

Table 1.4
Symptoms in Anxiety Disorders According to Physiological Systems (adapted from Beck & Emery, 1985)

<table>
<thead>
<tr>
<th>Cardiovascular</th>
<th>Neuro muscular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpitations</td>
<td>Fidgeting</td>
</tr>
<tr>
<td>Heart racing</td>
<td>Fainting (P)</td>
</tr>
<tr>
<td>Increased blood pressure</td>
<td>Actual fainting (P)</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Decreased blood pressure (P)</td>
</tr>
<tr>
<td>Rapid breathing</td>
<td>Decreased pulse rate (P)</td>
</tr>
<tr>
<td>Difficulty in getting air in</td>
<td>Shallow breathing</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>Lump in throat</td>
</tr>
<tr>
<td>Pressure on chest</td>
<td>Choking sensation</td>
</tr>
<tr>
<td>Rapid breathing</td>
<td>Spasm of bronchi (P)</td>
</tr>
<tr>
<td>Neuro muscular</td>
<td>Gasping</td>
</tr>
<tr>
<td>Increased reflexes</td>
<td></td>
</tr>
<tr>
<td>Startle reaction</td>
<td></td>
</tr>
<tr>
<td>Eyelid twitching</td>
<td></td>
</tr>
<tr>
<td>Insomnia</td>
<td></td>
</tr>
<tr>
<td>Spasm</td>
<td></td>
</tr>
<tr>
<td>Tremors</td>
<td></td>
</tr>
<tr>
<td>Rigidity</td>
<td></td>
</tr>
</tbody>
</table>
**Gastrointestinal**
- Abdominal pain (P)
- Loss of appetite
- Revulsion toward food
- Nausea (P)

**Urinary Tract**
- Pressure to urinate (P)
- Frequency of urination (P)

**Skin**
- Face flushed
- Face pale
- Localized sweating (palms)

<table>
<thead>
<tr>
<th>Heartburn (P)</th>
<th>Abdominal discomfort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vomiting (P)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** (P) represents parasympathetic symptom

Barnard and Teasdale (1991), coming from a cognitive processing perspective, offer an elaboration of how emotion is generated with their Interacting Cognitive Sub-systems model. They point to the integrative nature of the appraisal process which involves multiple aspects including sensory input (e.g., voice tone, proprioceptive feedback), recall, and assignment of meaning. They suggest that emotion is "a distributed phenomenon" between the processing systems of the organism. They suggest that the dispute about whether emotion is dependent on cognition or emotion is independent of cognition becomes redundant as the "feeling state" is the product of the integration of systems. In adapting this notion to Beck's model the affective experience of anxiety could be seen to be the integrative effect of the cognitive, behavioural and physiological processes. This view of the affective experience of anxiety seems to be closer to Lang's (1985) recent view of the affective experience of anxiety. He sees the three systems – verbal reports of distress, fear related behavioural acts, and visceral and somatic activation – as being the "data of anxiety" with the affective experience of anxiety comprising the collective pattern of responses in these sub-systems.
The Nature of Musical Performance Anxiety

Definition of Musical Performance Anxiety

Beck (Beck & Emery, 1985) classifies one category of anxiety disorders as the evaluation anxieties. These anxieties occur in situations where people perceive themselves to be under evaluation. Such situations include normal social interactions, public speaking, test taking and musical performance. He suggests that people will experience anxiety in these circumstances when they feel vulnerable. Their level of vulnerability can be influenced by several factors. One factor will be the status and ranking of those doing the "evaluating". If a person perceives themself to be of inferior status than those around them they will see themself as less "powerful" and therefore less confident and less competent. Another factor is the person's level of confidence. This will be affected by the person's perceived ability to perform adequately and is influenced by the magnitude of their expectations, the difficulty of the task, and the anticipated punishment for an inadequate performance. A third factor is the pressure to conform within stated or unstated rules, for example, in public speaking, maintaining accepted standards of fluency and control of speech. If a person believes that they cannot adhere to these rules then they will fear the disapproval of the "evaluators". A fourth factor is the occurrence of primitive reflexive responses such as fight, flight, freezing and fainting. These responses can impede the flow of speech, thinking, recall and motor function and pose a further threat to successful performance.

A form of anxiety falling into Beck's category of evaluation anxiety is musical performance anxiety. For some musicians performance anxiety can be a pernicious and persistent problem leading to impaired performances.
and even a total disruption of their musical careers (Reubart, 1985; Brandfonbrener, 1986). Carl Flesch, writing in his classic text on violin instruction in 1930, devotes a large section to what he calls "purely psychic hindrances" and refers to performance anxiety as "malicious auto suggestion" (Flesch, 1930). Some of the great musicians of this century, such as Pablo Casals, have confessed to experiencing severe performance anxiety throughout their entire careers (Deri, 1962; Mach, 1981).

Salmon (1990) in his explanation of musical performance anxiety adopts the three systems model. He defines musical performance anxiety "as the experience of persisting, distressful apprehension about and/or actual impairment of, performance skills in a public context, to a degree unwarranted given the individual's musical aptitude, training, and level of preparation" (p 3). There are four features of this definition. First, musical performance anxiety is a form of anxiety which only occurs in the presence of an audience. The audience might consist of a music teacher, friends, family, fellow performers, an audition panel, an examination panel or a concert audience. Second, the performer experiences anxiety symptoms in connection with their performance. The symptoms of musical performance anxiety vary from performer to performer but usually include symptoms across the four systems of anxiety. These can include feelings of dread and panic (affective), loss of sleep, trembling, muscle tension, rapid breathing (behavioural), sweating, increased heart rate, digestive upset, dry mouth (physiological), and worry, "catastrophizing" and distracted thoughts (cognitive) (Reubart, 1985). Third, the performer may experience actual impairment of their performance because of musical performance anxiety. It does not necessarily follow, but often can, that a performer who experiences musical performance anxiety before and during a performance does not play to their potential. Fourth, the expression of musical
performance anxiety is an objectively unwarranted one. According to the criteria of skill, talent and preparation, the performer has no reason to feel unnecessarily anxious about the performance. In Beck's terms it is an unrealistic perception of danger.

Response synchrony in musical performance anxiety, following the three systems model, has been tested by Craske and Craig (1984). They assessed the cognitive, behavioural and physiological responses of low-anxiety and high-anxiety pianists in two performance conditions, with and without an audience. They predicted, on the basis of the three systems model of Lang, as extended by Hodgson and Rachman (1974) and Rachman and Hodgson (1974), that there would be greater synchrony of response systems under conditions of high stress, and desynchrony under conditions of low stress. They found the greatest response synchrony between cognitive, behavioural and physiological measures occurred amongst the anxious pianists when they performed before an audience, although the intercorrelations between measures were weak. When the non-anxious group performed before an audience, cognitive and behavioural measures of anxiety remained stable while heart rate increased, suggesting an arousal response to a high demand situation. Synchrony was less for both groups without an audience and weakest in the non-anxious group. Craske and Craig (1984) concluded that the study's findings were consistent with the three systems model in the case of musical performance anxiety and demonstrated that the response systems tended to change independently from one another.

Arousal

Arousal has been raised as a concept relevant to the subject of musical performance anxiety. Arousal is said to reflect the level of physiological
activation of the autonomic system and facilitates preparation for overt activity and helps to maintain it (Duffy, 1962; Duffy, 1972). The "Yerkes-Dodson law" (Yerkes & Dodson, 1908) suggests that performance on motor skills is impaired at low and high levels of arousal and is optimal at moderate levels. This has been referred to as the inverted-U hypothesis. Easterbrook (1959) and Wachtel (1968) have suggested that arousal could affect performance through changes in cue utilization and attention. Various studies (Kendrick, Craig, Lawson & Davidson, 1982; Neftel, Adler, Kappeli, Rossi, Dolder, Kaser, Bruggesser & Vorkauf, 1982; Craske & Craig, 1984; James & Savage, 1984) indicate that autonomic responsiveness in performers is increased under performance conditions suggesting that arousal does occur. Measures of responsiveness have indicated increases in heart rate, galvanic skin conductance, respiration rate, and raised concentrations of adrenaline and noradrenaline in the urine.

Neiss (1988a; 1988b) argues that the inverted-U hypothesis is flawed as the concept of arousal is excessively broad. He points out that it is not possible to distinguish between several emotional states simply on the basis of arousal. Emotional states such as anger, joy, surprise, sadness, and sexual excitement all show a heightened physiological response. He argues that it is more useful to look at the interactions between the physiological, affective and cognitive components of psychobiological states and their relationship to motor performance. In the context of musical performance anxiety Steptoe (1989) also supports this view. He points to the Craske and Craig study (1984) which found that non-anxious pianists and anxious pianists both exhibited similar increases in heart rate when playing before an audience so that the anxious and non-anxious performers were not distinguishable simply from this measure. Steptoe (1989) suggests that the influence of physiological arousal may result from the individual's...
perception of their somatic state rather than the absolute level of arousal itself. This would help explain why some performers believe that arousal facilitates performance and others not. He suggests that physiological arousal could help potentiate musical performance anxiety through responses such as hyperventilation but concludes that such arousal is not sufficient in itself to cause musical performance anxiety.

Hamann (Hamann, 1982; Hamann & Sobaje, 1983) has observed that musicians with a high level of training and ability can perform better under conditions of increased anxiety, a finding he sees as consistent with the Yerkes-Dodson Law (Hamann, 1985). Hamann refers to anxiety rather than arousal. Hamann argues that whereas excessive performance anxiety is clearly debilitating, a musician can also be too relaxed to perform at their best. That some performance anxiety is a necessarily functional part of a musician's professional life is supported by music educators who have written on this topic (e.g., Triplett, 1979; Reubart, 1985).

Summarizing the evidence on the relationship between arousal and performance Salmon (1990, p 6) concludes that:

it is difficult to generalize about what constitutes "optimal" arousal. A specific level of arousal may or may not optimize performance, depending on how it is interpreted by the performer. The utility of the Yerkes-Dodson relationship lies in its implication that arousal states do indeed provide a motivating force that is channelled and harnessed more effectively by some performers than others.

State-Trait Anxiety

Spielberger (Spielberger, Gorsuch & Lushene 1970; Spielberger, 1985) has made a distinction between trait and state anxiety. The former refers to a person's general predisposition to chronic anxiety. State anxiety refers to a
time limited response to a specific anxiety provoking situation. Individuals high on trait anxiety are more likely to "overreact" to objectively non-threatening situations than those low on trait anxiety. Performers who experience severe musical performance anxiety are perhaps more likely to have higher levels of trait anxiety than those less susceptible to musical performance anxiety. Lehrer, Goldman and Strommen (1990) surveyed 238 musicians to assess the relationship of attitudinal variables to musical performance anxiety. They also measured trait anxiety and found that many individuals who experienced performance anxiety also experienced anxiety in other situations. While suggesting that trait anxiety might be a factor in musical performance anxiety, they also concluded that it was not the major factor and that, in most cases, musical performance anxiety is situation specific.

Cognitions

The role of cognitive self-statements and beliefs has been investigated in musical performance anxiety. Steptoe and Fidler (1987) devised a scale with which they surveyed professional, amateur and student orchestral musicians. They found that self-reported musical performance anxiety was lowest amongst the professional group and highest amongst the student group. They found that, across the three groups, individuals with higher musical performance anxiety were more likely to report the use of catastrophizing self-statements. These included statements such as, "I am almost sure to make a dreadful mistake and that will ruin everything", "I do not think I will be able to get through to the end without cracking up" and "I do not feel in control of this situation; anything might happen". Those with a moderate degree of musical performance anxiety were more likely to report the use of realistic appraisal self-statements compared with those with high
and low musical performance anxiety. These included statements such as, "I'm bound to make a few mistakes, but so does everyone", "The audience wants me to play well and will make allowances for any slips" and "I'll concentrate on technical aspects of the music and the interpretation I've prepared". Steptoe and Fidler suggest this finding might be consistent with an inverted-U relationship between performance anxiety and performance quality. The Lehrer et al. (1990) study found that worry was the factor most correlated with the experience of musical performance anxiety in their sample. Other factors – judgmental attitudes, concern about the reactions of others and concern about being distracted – also correlated with increased musical performance anxiety.

The Nature of Musical Performance Anxiety

In summary, it appears that musical performance anxiety fits well into the three systems model of anxiety. The importance of the cognitive appraisal process pivotal in Beck's model of anxiety is also supported by the studies investigating the role of cognitions in musical performance anxiety. The affective nature of anxiety is a part of the experience of anxiety and any model of anxiety should attempt to incorporate it. The view taken by the present author, based on that by Barnard and Teasdale (1991), is that the affective component can be best understood as an integrative sum of the cognitive, behaviour and physiological systems rather than seen as having the same status as the other three components, as suggested by Beck. Arousal is possibly a useful concept when confined to a purely physiological role as part of the interaction amongst response systems. The evidence that some performance anxiety/arousal can enhance performance under certain conditions seems plausible because of the small amount of experimental
evidence supporting this notion, and the anecdotal evidence available in the music profession.

**Treatment of Musical Performance Anxiety:**

**A Review of the Literature**

The earliest reported study using a psychological treatment approach aimed at the reduction of musical performance anxiety was carried out by Wardle (1975) with brass players. He reported that subjects given either systematic desensitization or progressive muscle relaxation achieved an equal reduction in performance anxiety, compared to a no-treatment control condition, on behavioural and heart rate measures of anxiety. He found that performing competence was unaffected. Appel (1976) in a study using piano students found that training in musical analysis, which examined the structure of the music, decreased the number of errors subjects made during performance, but did not reduce physiological or cognitive measures of anxiety. Systematic desensitization showed the greatest improvement, with reductions in performance errors, and improvements on cognitive and physiological measures of anxiety.

A more recent study, employing 53 piano students, used the cognitive-behavioural approach of Meichenbaum's (1977) self-instruction training and compared it with behaviour-rehearsal, a purely behavioural technique (Kendrick, 1979), and a waiting-list control (Kendrick, Craig, Lawson & Davidson, 1982). Kendrick *et al.* (1982) observed no treatment differences between the three groups following a three week treatment programme. At a five week follow-up, they found both experimental groups exhibited a decrease in self-reported anxiety compared to the control group. They also claimed an improvement in performance error count at follow-up;
however, the raters who were used at follow-up to make the assessment of performance error count were not the same as those used at the pre-test and post-test points. The possible variability in rater assessment casts some doubt on the reliability of this measure of treatment effectiveness at follow-up.

Sweeney and Horan (1982) compared 49 pianists on the individual treatments of cue-controlled relaxation (CCR) and cognitive restructuring (CR), a combination treatment of cue-controlled relaxation and cognitive restructuring (CCR+CR), with a standard treatment control (STC) and a waiting-list control. Overall, they found the three experimental groups to be more effective than either control group in reducing performance anxiety as reflected by improvements on self-report, behavioural and physiological measures. Furthermore, they found the CCR and CCR+CR groups to be equally as effective and both slightly more effective than the CR group. Sweeney and Horan held therapist contact time constant across the three treatment programmes to one hour per session over six sessions. They suggested that the lack of superiority of the CCR+CR group over the individual treatment groups was due to insufficient time being provided for members of the combination group to acquire all the skills being presented. The Sweeney and Horan study did not include a follow-up.

Craske and Rachman (1987), using a combination treatment of cognitive-behavioural and relaxation techniques based on the Kendrick et al. (1982) study, were able to show subjective fear reduction, reduction in heart rate and improved performance quality in anxious pianists following the treatment programme. However, the study was not designed to shed any light on the comparative effectiveness of the cognitive-behavioural and behavioural treatments.
Nagel, Himle and Papsdorf (1989) conducted a study with 20 music undergraduates from a school of music. Eight were assigned to a wait-list control group. Twelve were assigned to a treatment group which involved a combination of progressive muscle relaxation, cognitive therapy (self-instructional training and rational emotive therapy) and temperature biofeedback training. Two one-hour sessions were conducted over six weeks. Six self-report measures were taken at pre-test and post-test. Following treatment subjects showed improvements on the trait anxiety and performance anxiety self-report measures. There were no changes in state anxiety; however, this may simply be because the self-reports were completed under non-performance conditions on both occasions. A deficiency of this study is the reliance on a large number of self-report measures, a lack of behavioural and physiological measures, the lack of a control, and the lack of a performance condition for assessment.

Grishman (1989), in an unpublished study reported by Salmon (1990), assigned 41 anxious musicians to either a progressive muscle relaxation group or a no-treatment control condition. He used a variety of self-report, behavioural and physiological measures to measure the effect of a six-week treatment programme. The results suggested a treatment effect on the cognitive measures and baseline heart rate. Commenting on this finding and others, Salmon (1990) concludes that relaxation training is an effective treatment for performance anxiety and, furthermore, points to its effectiveness in modifying both cognitive and physiological indices of musical performance anxiety.

Various studies have demonstrated that differential muscle relaxation using biofeedback training can reduce muscle tension in specific parts of the
body (Lehrer, 1987). Irvine and LeVine (1981) and LeVine and Irvine (1984) were able to teach violinists and violists to relax their left thumbs while playing. Reynolds and Morasky (1981) were able to achieve relaxation of the muscles of the forearms and hands in string players and clarinetists.

The use of beta blocking drugs has been advocated for the treatment of musical performance anxiety. The aim of beta blockers is to moderate the autonomic symptoms of anxiety such as acceleration of heart rate, increased blood pressure, overbreathing, dry mouth, and muscle tension. Brandfonbrener (1990), in a review of several empirical studies in this area (James & Savage, 1984; Brantigan, Brantigan & Joseph 1982), suggests that beta blockers are able to moderate the autonomic symptoms of musical performance anxiety and can lead to a subjective and objective improvement in performance quality. However, in one study which she reviews using singers (Gates & Montalbo, 1987), she concluded that the medication did not improve performance quality and performers preferred not to use beta blockers. In reviewing the effects of beta blockers on a range of performance anxieties (e.g., musical, test and public speaking) Barlow (1988) concludes that their positive effects may be limited to those types of performances relying on fine motor coordination. This is true of musical performance where even minor peripheral tremors can be disruptive. Lehrer, Rosen, Kostis and Greenfield (1987) raise concern about the use of beta blockers suggesting that while autonomic arousal may be decreased self-reported anxiety may not be affected. They also indicate that beta blockers can affect musical qualities of the performance such as rhythmic control and dynamic intensity.

A recent study by Clark and Agras (1991) has compared cognitive-behaviour therapy with the use of medication. They suggest in a review of research on
the use of beta blockers in the treatment of performance anxiety that the results have been equivocal. They suggest that buspirone has potential advantages as it has been demonstrated to reduce general anxiety, does not impair memory or psychomotor performance and has few side effects.

They allocated 34 anxious professional, student and amateur musicians to four treatments groups in a double blind study. The treatment groups were: cognitive-behaviour therapy with placebo (n=9), cognitive-behaviour with buspirone (n=8), buspirone alone (n=9) and placebo alone (n=8). The measures they used included six self-report measures, heart rate during performance, and a comparison rating of performance quality before and after treatment. All subjects completed pre-test and post-test performances with a five-week treatment programme in between. The cognitive-behaviour therapy treatment included cognitive restructuring and applied relaxation training.

They found that the buspirone and placebo treatments had little or no effect on the treatment measures. Subjects completing the cognitive-therapy component demonstrated improvements on four of the self-report scales and on performance quality. There was no change in heart rate. Clark and Agras asked subjects to complete one of the self-report measures ("Personal Report of Confidence as a Performer", Appel, 1974) at a one-month follow-up. Subjects had shown no improvement on this measure at post-test but did show a significant improvement at follow-up. Clark and Agras suggest that subjects may not have had sufficient opportunity to practise their skills during the five-week treatment programme. They concluded that the most effective treatment group had been the cognitive-behaviour therapy with placebo with the use of buspirone having little advantage.
Many performers and music educators have written suggestions on how to avoid musical performance anxiety. Grindea (1975, 1978), a pianist, emphasizes the use of breathing, correct posture and natural movements to lessen muscle tension. Meharg (1988), a violist and psychologist, suggests the use of relaxation, breathing, positive thinking and mental imagery. Galper (1989), a jazz pianist, suggests that performers reduce their build-up to the performance by "psyching-out" and lessening the importance of the performance in their mind. Wilson (1991), a clarinetist and medical practitioner, suggests practising performing, choosing suitable repertoire, avoiding perfectionism by permitting mistakes, and performing from the "right brain" rather than the "left brain".

In summary, the research evidence, although not extensive, suggests that cognitive and behavioural treatments are effective in the treatment of performance anxiety and this view is shared by other reviewers (e.g., Lehrer, 1987; Salmon, 1990). The use of biofeedback also appears to be an area of promise. The use of beta blockers, in combination with other therapies, possibly has a place in treatment where the physical symptoms are excessive.

A Model for the Treatment of Musical Performance Anxiety

The following model for the treatment of musical performance anxiety is adapted from Beck's cognitive model of anxiety (see Figure 1.2). From the model it can be seen that the performer, in the initial instance, cognitively appraises a performing situation as threatening or challenging. If it is appraised as threatening the anxiety response is evoked with consequent cognitive, behavioural and physiological symptoms of anxiety. The physiological symptoms include heightened arousal leading to fight, flight
and freeze responses or underarousal leading to a faint response. These symptoms are automatic responses to threat. They may become exacerbated by a continued perception of the threat's existence. The initial responses to threat of each of the three systems collectively leads to the affective experience of anxiety. The affective experience of anxiety is then cognitively appraised as "losing control" of the performing situation which in turn becomes a source of new threat to the performer, further increasing the intensity of the symptoms in the cognitive, behavioural and physiological systems. As a consequence, the anxiety response begins to "feed" off itself with the possibility of this "self-feeding" source of anxiety becoming greater than the original source of threat.

The performer who cognitively appraises the performing situation as challenging is likely to experience a rather different result. It is likely that they will experience physiological arousal with an increase in heart rate, respiratory rate, etc. However, it is likely that the heightening of arousal will contribute to an affective experience of excitement rather than anxiety. As a result, they will be able to maintain a level of controlled respiration, be more likely to exhibit relatively relaxed behaviour, and be thinking positively. Their affective experience of excitement will be perceived as "maintaining control" and will reinforce the performer's appraisal that the performing situation is to be viewed as a positive challenge which they can meet.
Figure 1.2
Diagram showing the two different feedback loops that can operate when faced with a performing situation.
In the treatment of the anxious performer it then becomes essential to bring about a fundamental cognitive shift from perceiving the performance situation as threatening to perceiving it as challenging. This can be achieved by helping them to change their responses on one or more of the response systems. Greater control in any one system will be likely to facilitate greater control in the others. It is the overall sense of control which is likely to bring about treatment gain. Barlow (1988) has commented, "... procedures that redirect the focus of attention and instill a sense of control (coping) should be important in treating any anxiety disorder." (p 564.) Ultimately, for long-term treatment gain, it will be necessary for the performer to experience a successful performance without excessive anxiety and with a sense of control.

The Aim of the Research

The aim of this research project was to try and develop a more effective treatment for musical performance anxiety than has currently been available. It was believed that this aim could be achieved by modifying existing standard cognitive and behavioural treatments to meet the specific needs of the performing musician.

The main study of the project was the Final Study in which the modified treatment was tested with a standard treatment. Before conducting the Final Study it was necessary to conduct two preliminary studies. The first preliminary study attempted to establish what the most effective standard cognitive and behavioural treatment for musical performance anxiety might be. The second preliminary study attempted to derive new cognitive and behavioural strategies for managing musical performance anxiety. This was done by ascertaining the ways in which successful professional
performers manage performance anxiety and then developing treatment strategies from these.
CHAPTER 2

A COMPARISON OF COGNITIVE AND BEHAVIOURAL TREATMENTS
FOR MUSICAL PERFORMANCE ANXIETY

(Preliminary Study 1)

Rationale for the Research

In the previous review of the literature it was concluded that cognitive and behavioural therapies are effective in the treatment of musical performance anxiety. However, in attempting to derive the most effective treatment of musical performance anxiety it is important to establish the relative effectiveness of standard cognitive and behavioural therapies. Some studies (e.g., Craske & Rachman, 1987) appear to assume that a combination cognitive and behavioural treatment of musical performance anxiety is more effective than either an individual cognitive or relaxation treatment.

The study by Sweeney and Horan (1982) has been the only one to date to test the relative effectiveness of combination and individual therapies. Sweeney and Horan found the relaxation and combination treatments to be equally as effective, and both slightly more effective than the cognitive treatment alone. They suggested that the lack of superiority of the combination treatment over the relaxation treatment was due to the combination group members having to learn twice the material as the members of the relaxation group, in the same amount of time. They concluded, "[t]he strength of the combined treatment is particularly impressive in view of the fact that its true potential may have been critically compromised by our holding of counsellor contact time constant across all active experimental and control conditions" (p 494).
The issue of appropriate length of group treatments for cognitive and behavioural therapies appears to be one not frequently addressed in the anxiety research literature. For example, Öst and Jansson (1987), in an otherwise comprehensive review of methodological issues in cognitive-behavioural treatments of anxiety disorders, do not address the question of appropriate treatment length. Latimer and Sweet (1984), in an extensive review of studies comparing the effectiveness of behavioural and cognitive therapies in clinical disorders generally, found treatment times ranging from three hours to 12 hours. The previous review of studies on the treatment of musical performance anxiety (Chapter 1) shows that the number of treatment sessions has ranged from three to eight with total treatment times varying from five hours to eight hours.

**Aim and Hypotheses**

The aim of the preliminary study was to test the prediction put forward by Sweeney and Horan (1982) that an increase in treatment time for a combination cognitive and behavioural treatment, over and above that allowed for the individual treatment components, would enhance the effectiveness of the combination treatment. Specifically, the present study tested the hypothesis that a combination treatment of self-instructional training (Meichenbaum, 1977, 1985) and progressive muscle relaxation (Goldfried & Davison, 1976) would be superior to the additive effects of these treatments given individually, in alleviating musical performance anxiety. The combination treatment time was increased to twice that of the individual treatments and a six week follow-up was conducted. Since previous studies have consistently demonstrated that cognitive and
behavioural treatments are superior to controls, a control group was not included, allowing a more parsimonious use of the subjects available.

The study also provided the researcher with the opportunity of testing experimental design procedures appropriate to running treatment outcome studies for musical performance anxiety as a preliminary to the Final Study. The procedures used in this study were adapted from the studies of Kendrick et al. (1982) and Sweeney and Horan (1982).

Method

The Subjects and Their Setting

The sample consisted of 25 advanced level student pianists ranging in age from 11 to 33 years who were studying at the Conservatorium of Music (University of Wollongong). Twenty-two females and three males participated in the study. The mean age of subjects was 18.44 (SD=4.8) years, the mean time of playing piano was 11.08 (SD=5.0) years and the mean length of time they had experienced performance anxiety was 5.64 years (SD=3.42). Twenty-seven musicians were referred by their teachers, of whom 25 participated in the study. As a secondary selection procedure, musicians were also screened using the Report of Confidence as a Performer Scale (RCPS) (Appel, 1974) which is a measure of previous severity of performance anxiety. Scores on this scale range from 0 to 15 with scores greater than five considered above average performance anxiety. Subjects were randomly distributed across the three treatment groups. These consisted of self-instructional training, progressive muscle relaxation and combination treatment groups.
Means and standard deviations for age, years of reported performance anxiety, years of playing piano, difficulty of test piece, practice of the test piece during the treatment program, RCPS and treatment expectancy effects (Expect 1 and Expect 2) are given in Appendix 2.1. Although the sample size in this study was relatively low the researcher felt justified in carrying out ANOVA tests as the study was a preliminary one and it was felt to be important to contrast the three groups. One-way ANOVAs indicated there were no significant differences between groups ($p > .05$) on these variables, except for a significant difference on the RCPS ($F = 5.00$, $df = 2,22$, $p = .016$) and Expect 2 ($F = 5.97$, $df = 2,22$, $p = .009$) (see Appendix 2.2). Self-reported performance anxiety on the RCPS in the combination group ($mean = 17.3; SD = 4.6$) was significantly higher than for the self-instructional ($mean = 10.8; SD = 5.1; p < .05$) and relaxation ($mean = 11.3; SD = 3.6; p < .01$) groups (see Appendix 2.3). This suggests that the combination group's level of self-perceived performance anxiety was higher at the outset of the study than for the other two groups. Expect 2 in the combination group ($mean = 9.4; SD = 0.8$) was significantly higher than for the relaxation group ($mean = 8.0; SD = 1.0; p < .01$) but was not significantly different from the self-instructional group ($mean = 8.8; SD = 0.7; p > .05$) groups (see Appendix 2.3). This suggests that following the completion of the final treatment session the combination and self-instructional groups had a higher expectation of treatment success than the relaxation group (Expect2), while at the completion of the first treatment session all three groups had a similar expectation of treatment success (Expect1).

Public recitals were held in the Music Auditorium in the School of Creative Arts, University of Wollongong, and a Yamaha grand piano was used on each occasion. Each recital was attended by members of the public and relatives of the performers with the audience size being approximately 20
people on each occasion. An audio recording of each performance was made on a high fidelity cassette recorder.

The test piece that subjects performed for each recital was a self-selected work of three to six minutes' duration. It was specified that the piece be one which they had mastered technically, had performed previously in public and could perform from memory. Subjects played in a different randomized order at each recital.

The Outcome Measures

1. The State Scale of the State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1970) was administered to subjects 15 minutes before they entered the auditorium to perform. This scale has been widely used in previous research as a global measure of transitory anxiety. It has been demonstrated to have construct validity and high internal consistency with reliability coefficients ranging from .83 to .92 (Spielberger et al., 1970).

2. The Musical Performance Anxiety Self-statement Scale (MPASS) (Craske, Craig & Kendrick, 1988) was administered immediately following the completion of each subject's performance. This scale has been demonstrated to have construct validity and high internal consistency ($r = 0.92$; Craske et al., 1988). A moderate level of retest reliability has been shown under different performing conditions of two performances four weeks apart ($r = 0.56$; Craske et al., 1988). The scale was specifically developed to assess the frequency of pianists' positive and negative self-statements, before, during and after a performance. A higher score represents a greater frequency of positive self-statements.
3. Performance quality (PQ) was assessed by two judges who were experienced piano examiners. They were asked to rate each performance on a ten-point scale using standard criteria for judging public and institutional examinations in piano. The criteria used included stylistic awareness, spontaneity of performance, attention to rhythm, tempo, dynamics and notation. Judges worked independently from copies of the music score and audio-tape recordings of each performance. They were blind with respect to subjects' group membership and order of performance, with the recorded test performances being presented to them in a completely randomized order. For the PQ measure, Kendall's coefficient of concordance was calculated to assess interater reliability. The results (pre-test, $W = 0.68$; post-test, $W = 0.72$; follow-up, $W = 0.72$; where $W = 0$ indicates no agreement and $W = 1$ indicates perfect agreement) suggests a moderately high degree of concordance (Hays, 1988). The average of the two raters' scores were used in the analysis.

4. Expectancy effects were assessed twice during treatment following the procedure employed by Sweeney and Horan (1982). This measure tested for the possibility of different treatment conditions generating different demand characteristics. At the end of the first treatment session, subjects were asked to rate on a ten-point scale how confident they were that the program just described to them would enable them to control their performance anxiety (Expect 1). At the end of the final session subjects were asked to rate, on ten-point scales, three items relating to (i) the logic of the treatment, (ii) their confidence in recommending the treatment to a friend, and (iii) their confidence that they would be able to manage their performance anxiety successfully (Expect 2).
The Procedure

Assessments were made at a pre-test recital, one week before commencement of the treatment, at a post-test recital, one week after treatment and at a follow-up recital, six weeks after the post-test recital.

Treatment sessions were run on two occasions, on the first occasion with 16 subjects (self-instructional: \( n = 5 \), relaxation: \( n = 6 \), combination: \( n = 5 \)) and on the second with nine subjects (\( n = 3 \) for each group). Conducting the program in waves, originally suggested by Bernstein and Paul (1971), is used to accommodate for the fact that there are low numbers of subjects available at any one time.

The Treatment Sessions

The self-instructional training group and the progressive muscle relaxation group met for one hour per session while the combination treatment group met for two hours per session. Sessions were held weekly for six weeks. Sweeney & Horan (1982) in their study gave six one-hour sessions for each treatment.

The first session for each treatment group began with the therapist giving a description of the physiological, behavioural and cognitive responses to stress ("fight or flight response") in the context of musical performance anxiety. Subjects were able to discuss how their symptoms related to the fight or flight response. Following this discussion, subjects were presented with the rationale for their particular treatment programme.
**Self-instructional training.** From the second session onwards, subjects were made aware, through discussion, of their use of negative self-statements and the effect these had on their playing. They were taught to challenge negative self-statements and replace them with realistic and positive ones as they applied to the performing context. They were asked to devise lists of positive self-statements for the following categories:

- Preparation for Performance
- Confronting the Performance
- During the Performance, and
- Completion of the Performance.

They were asked to put these self-statements into practice when playing outside of therapy sessions. In the final two sessions, subjects were given the opportunity to play pieces before the group members while applying their self-statements, and with further opportunity for discussion.

**Relaxation treatment.** In the second session subjects were instructed in the use of progressive muscle relaxation and the technique of breathing control. Breathing control appears to have a direct effect in the reduction of autonomic symptoms brought about by hyperventilation (Salkovskis, Jones & Clark, 1986; Cowley & Roy-Byrne, 1987). This symptom is common in anxious musicians (Reubart, 1985). Subjects were instructed to practise relaxation once a day, and breathing control several times a day, outside of therapy sessions. Each subsequent session involved further practice of breathing control and relaxation with monitoring of each subject's progress in the use of these techniques and discussion of their effectiveness. Subjects were asked to put these techniques into practice when playing outside of therapy sessions. In the final two sessions, subjects were given the opportunity to play pieces before the group members while applying their techniques, and with further opportunity for discussion.
Combination treatment. The first hour of each session was devoted to the self-instructional techniques as for the self-instructional group, and the second hour was devoted to the relaxation techniques as for the relaxation group. Subjects were asked to put the techniques they had learnt into practice when playing outside of therapy sessions. In the final two sessions, subjects were given the opportunity to play pieces before the group members while applying the techniques, and with further opportunity for discussion.

The Therapist

The researcher acted as therapist for each of the three treatment groups. He has formal training and nine years' clinical experience in the use of the therapies implemented in this study.

Results

Preliminary Analysis

The three dependent variables were STAI (state anxiety), MPASS (self-talk) and PQ (performance quality). There was one between subjects factor with three levels; self-instructional \((n = 8)\); relaxation \((n = 9)\); and combination \((n = 8)\); and one within subjects factor with three levels; pre-test; post-test; and follow-up.

Two of the subjects failed to attend the follow-up recitals, one each from the self-instructional and relaxation groups. In a procedure for predicting missing values in repeated measures designs (Tabachnick & Fidell, 1989),
follow-up scores for each of these subjects were calculated using regression equations on the group post-test means, for each dependent variable.

ANOVA tests carried out separately on the pre-test scores for STAI, MPASS and PQ indicated there were no significant differences between groups ($p > .05$) on MPASS and PQ (see Appendix 2.4). There was a significant difference between groups on STAI ($F = 5.81, df = 2,22, p = .009$). On STAI at pre-test, the combination group scored significantly higher ($t = 3.39, df = 22, p = .003$) than the relaxation group. There was a tendency towards significance between the combination and self-instructional groups (see Appendix 2.5). This result is consistent with the results on the RCPS at pre-test. Means and standard deviations for each group at pre-test, post-test and follow-up are presented in Table 2.1.

Table 2.1
Means (standard deviations) for the Self-instructional, Relaxation and Combination groups at pre-test, post-test and follow-up

<table>
<thead>
<tr>
<th></th>
<th>STAI</th>
<th>MPASS</th>
<th>PQ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-instructional</strong> $\ (n = 8)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>47.8 (10.7)</td>
<td>41.4 (68.7)</td>
<td>6.91 (1.2)</td>
</tr>
<tr>
<td>Post</td>
<td>41.5 (8.7)</td>
<td>89.4 (52.4)</td>
<td>7.33 (1.2)</td>
</tr>
<tr>
<td>Fol</td>
<td>46.9 (7.5)</td>
<td>72.4 (78.1)</td>
<td>7.48 (0.6)</td>
</tr>
<tr>
<td><strong>Relaxation</strong> $\ (n = 9)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>41.2 (6.5)</td>
<td>64.9 (76.2)</td>
<td>7.06 (0.9)</td>
</tr>
<tr>
<td>Post</td>
<td>36.6 (6.1)</td>
<td>72.1 (47.7)</td>
<td>7.50 (1.0)</td>
</tr>
<tr>
<td>Fol</td>
<td>39.2 (6.1)</td>
<td>104.2 (17.4)</td>
<td>7.92 (0.8)</td>
</tr>
<tr>
<td><strong>Combination</strong> $\ (n = 8)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>58.3 (13.2)</td>
<td>5.5 (50.7)</td>
<td>6.72 (0.9)</td>
</tr>
<tr>
<td>Post</td>
<td>43.9 (6.9)</td>
<td>54.3 (34.4)</td>
<td>7.05 (0.7)</td>
</tr>
<tr>
<td>Fol</td>
<td>40.0 (7.2)</td>
<td>78.5 (37.0)</td>
<td>6.87 (1.1)</td>
</tr>
</tbody>
</table>

**Note:**
STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self-statement Scale;
PQ = Performance Quality.
Treatment Outcome

Despite the relatively small sample size, the ratio of subjects per cell to dependent variables was sufficiently large to justify carrying out multivariate analysis of variance (Spector, 1981). The STAI scores at pre-test were used as the covariate in subsequent analyses to adjust for pre-test differences. An overall MANCOVA indicated there was not a significant group x time x measure interaction effect (see Appendix 2.6). Within subjects MANCOVAs were conducted separately on each dependent variable. These indicated a group x time interaction on STAI, \( F(4,44) = 3.35, p = .018 \) (see Appendix 2.7). The group x time interaction effects on MPASS and PQ were not significant although, in the case of PQ there was a tendency towards significance, \( F(4,44) = 2.28, p = .076 \). Main time effects were found for all the dependent variables.

To explore the precise source of between group differences on STAI, univariate analyses of covariance (ANCOVA) with orthogonal planned contrasts were conducted. No significant differences were found between the self-instructional and relaxation groups (see Table 2.2). The self-instructional and relaxation groups were combined and contrasted with the combination group. Significant differences were found for the post-test to follow-up period and the pre-test to post-test plus follow-up period, indicating that, the combination group showed a superior improvement on STAI compared with the individual treatment groups (see Table 2.2).
Table 2.2
Between group contrasts using analysis of covariance for the Self-instructional (SI), Relaxation (R) and Combination (COMB) groups.

<table>
<thead>
<tr>
<th>Contrast</th>
<th>Variable</th>
<th>F (1,21)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test to follow-up</td>
<td>SI vs R</td>
<td>STAI</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>SI + R vs COMB</td>
<td>STAI</td>
<td>4.38</td>
</tr>
<tr>
<td>Pre-test to post-test + follow-up</td>
<td>SI vs R</td>
<td>STAI</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>SI + R vs COMB</td>
<td>STAI</td>
<td>7.67</td>
</tr>
</tbody>
</table>

Note: STAI = State-Trait Anxiety Inventory

Figure 2.1 indicates that the combination group experienced a consistent drop in anxiety following treatment while the self-instructional and relaxation groups experienced inconsistent changes. Figure 2.2 indicates that all three groups improved on self-talk following treatment, with the combination group experiencing the greatest and most consistent change. Figure 2.3 indicates that the self-instructional and relaxation groups improved on performance quality following treatment, while the combination group experienced an inconsistent change.
Figure 2.1
Mean scores on state anxiety (STAI) for pre-test, post-test and follow-up

Figure 2.2
Mean scores on self-talk (MPASS) for pre-test, post-test and follow-up
To test the statistical significance of these trends related t-tests were conducted to assess within group change from pre-test to post-test and from pre-test to follow-up (see Table 2.3). For the pre-test to post-test period significant improvements were found, for the self-instructional group on MPASS, for the relaxation group on PQ, and for the combination group on STAI and MPASS. For the pre-test to follow-up period the self-instructional group showed no significant changes. Significant improvement occurred, for the relaxation group on PQ, and for the combination group on STAI and MPASS.
Table 2.3
Within group change for the Self-instructional (SI), Relaxation (R) and Combination (COMB) groups (related t-tests).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-test to Post-test</th>
<th>Pre-test to Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SI</td>
<td>R</td>
</tr>
<tr>
<td>STAI</td>
<td>1.17</td>
<td>1.72</td>
</tr>
<tr>
<td>MPASS</td>
<td>2.89*</td>
<td>0.29</td>
</tr>
<tr>
<td>PQ</td>
<td>2.12</td>
<td>2.60*</td>
</tr>
</tbody>
</table>

Note:
STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self-statement Scale;
PQ = Performance Quality.

Significance: *p < .05, ** p < .01, *** p < .001

The Relative Merits of Cognitive and Behavioural Treatments

The results from the analysis provide a mixed picture of treatment outcome. For reduction in state anxiety (STAI) the combination treatment proved more effective than the relaxation and self-instructional treatments. The combination treatment also produced a consistent increase in positive self-talk (MPASS) but did not show an improvement in performance quality (PQ). Of the individual treatments the relaxation group produced a consistent improvement in performance quality, while the self-instructional group produced only a temporary improvement in positive self-talk. The variability of MPASS scores was high across all groups with high standard deviations comparable to those found by Kendrick et al. (1982; SDs ranged from 43 to 64). At pre-test many of the performers obtained negative scores.
The combination and self-instructional groups obtained higher treatment expectancy scores (Expect2) upon the completion of the treatment sessions than the relaxation group. It is perhaps not surprising that the combination group members had a higher expectation of treatment success given the more thorough treatment program they received, and this could have led to better treatment gains. However, despite the self-instructional group having a higher treatment expectancy than the relaxation group, this did not lead to greater improvement for this group.

That the combination group did not improve on performance quality at follow-up is a puzzling result because the members of this group were thinking more positively and were feeling less anxious than at any time previously, and yet their level of performance quality was only slightly above that at pre-test. The combination group evidenced greater performance anxiety prior to treatment compared with the other two groups. It is possible that the members of this group responded differently to treatment because of their greater anxiety. This group contained the two most anxious subjects of the study. One of the subjects was a 33 year old mother who had returned to performing following a period of raising children, and who described her performance anxiety as being at its worst in the last three year period. She had recently failed an important music examination and had performed well below her level in a local public performance. On both occasions she had experienced memory blanks and profuse sweating. Her sweating was bad enough that she had to wipe the keys of the piano with a towel between movements before she could continue. The second subject was a 19 year old music student for whom piano was her second instrument and the recorder her primary instrument. She indicated that she experienced even greater performance anxiety when
playing the recorder compared with the piano and had earlier fainted in an ensemble performance while playing the recorder.

Both these subjects showed substantial improvements on state anxiety and self-talk following treatment but experienced a drop in performance quality. It is possible that for people who experience particularly severe musical performance anxiety such as these, greater assimilation time and individual therapy following a group program may well be required before significant gains in performance quality can be obtained. These findings also highlight the difference between "self-perception" of anxiety and "other-perception" of anxiety. It appears possible that a performer may perceive themselves as being less anxious while not appearing so to others. This would be the reverse of a performer who feels anxious while playing but is not perceived as being so by others (e.g., an audience).

The present results are consistent with findings (Sweeney & Horan, 1982; Kendrick et al. 1982; and Craske & Rachman, 1987) that standard cognitive and behavioural therapies are effective in reducing the deleterious effects of musical performance anxiety. That progressive muscle relaxation appears to be more effective than self-instructional training is also a result consistent with the findings of Sweeney and Horan (1982).

It appears from the results of this study that the increased treatment time allocated to the combination group may have enhanced treatment outcome, and that the effectiveness of the combination treatment in the Sweeney and Horan study (1982) may have been limited by inadequate treatment time. The researcher believes that increasing treatment time for the individual treatments would be unlikely to lead to greatly enhanced treatment outcome, as the extra sessions would have been largely repetitive. Also,
previous musical performance anxiety studies have usually relied on an average of six hours treatment time, the same time allotted in this study to the individual treatments. However, it remains to be tested whether increasing treatment time for individual treatments would also enhance their effectiveness. Therefore, a conclusive statement on the relative effectiveness of a combined versus individual treatment cannot be made.
CHAPTER 3
HOW PROFESSIONAL PERFORMERS MANAGE
PERFORMANCE ANXIETY
(Preliminary Study 2)

Introduction

The aim of the current study was to ascertain the ways in which successful performers manage performance anxiety. It was reasoned that the professional success of such performers was due, in part, to the psychological strategies they employed for managing performance anxiety. The study also attempted to determine, to a lesser extent, the musical and physical strategies performers used for managing performance anxiety. It was anticipated that a treatment programme for performance anxiety could be modelled on these strategies once they were determined.

An extensive review of the psychological, medical and musical literature indicated that no comprehensive study of the psychological approach of successful performers in preparing for performance, or of the ways in which they cope with performance anxiety, had been completed at the time of this study. Two quantitative studies which have attempted to meet this aim are by Steptoe and Fidler (1987) and Wolfe (1990).

Steptoe and Fidler (1987) surveyed the levels of performance anxiety amongst professional, amateur and student orchestral musicians \(n = 65\). In assessing the cognitive strategies used by the musicians in coping with performance anxiety they found that catastrophizing self-statements were
more likely to be used by subjects with high performance anxiety. The use of realistic cognitive self-appraisal was most common with those musicians reporting medium levels of performance anxiety when compared with those reporting either high or low levels. In assessing the behavioural strategies used by musicians for coping with performance anxiety, they found that 17 per cent of professional musicians with high anxiety reported taking sedatives as a method of coping, compared to 4 per cent of medium and none of the respondents with low anxiety. They found no other significant behavioural strategies amongst the groups. They found a tendency for medium anxious performers to report meditating more commonly (17 per cent) than low (10 per cent) or high (5 per cent) anxious performers.

A study by Wolfe (1990) surveyed 162 amateur and professional musicians asking them to describe strategies they found effective in coping with performance anxiety. Several measures of state and trait anxiety were also taken. The performers ranged in age from 14 to 80 years. Thirty (18 per cent) were soloists, 113 (70 per cent) were small-ensemble players, and 19 (12 per cent) were large-ensemble players.

Wolfe separated the strategies they employed into those which represented emotion-focussed coping or problem-focussed coping. An example of an emotion-focussed coping strategy was: "Smile, take deep breaths, and think light and loose." An example of a problem-focussed strategy was: "Be well prepared – have no unmastered technical difficulties in music." She further subdivided these broad categories into more specific sub-categories (see Table 3.1). Wolfe pointed out that together, the two categories "deep breathing/relaxation/physical activity" and "thorough preparation/practice/coaching" accounted for almost 40 per cent of the total number of
coping strategies. She emphasized that the majority of strategies reported were emotion-focussed ones (63 per cent) and that those performers who predominantly used emotion-focussed strategies tended to report less trait and state anxiety than those who predominantly used problem-focussed strategies.

Table 3.1
Strategies for coping with musical performance anxiety (adapted from Wolfe, 1990).

<table>
<thead>
<tr>
<th>CATEGORY &amp; SUB-CATEGORY</th>
<th>FREQUENCY (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotion-focussed</strong></td>
<td></td>
</tr>
<tr>
<td>1. Deep breathing/relaxation/ physical activity</td>
<td>74 (15.5)</td>
</tr>
<tr>
<td>2. Immersion/concentration on music</td>
<td>48 (10.0)</td>
</tr>
<tr>
<td>3. Minimizing the importance of the performance</td>
<td>43 (9.0)</td>
</tr>
<tr>
<td>4. Positive self-talk/self-acceptance</td>
<td>39 (8.2)</td>
</tr>
<tr>
<td>5. Prayer/meditation/imagery/visualization</td>
<td>35 (7.3)</td>
</tr>
<tr>
<td>6. Communication with audience/ giving to audience</td>
<td>27 (5.6)</td>
</tr>
<tr>
<td>7. Seeking/giving support within the ensemble</td>
<td>15 (3.1)</td>
</tr>
<tr>
<td>8. Using drugs/alcohol before performance</td>
<td>11 (2.3)</td>
</tr>
<tr>
<td>9. Engaging in distracting activity before performance</td>
<td>9 (1.9)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>301 (63.0)</td>
</tr>
</tbody>
</table>

| **Problem-focussed** |                   |
| 1. Thorough preparation/practice/coaching | 116 (6.7) |
| 2. Logistics of performance (e.g., making sure that music, stands, chairs, instruments are properly arranged and easily accessible) | 32 (6.7) |
| 3. Attention to performance hygiene (e.g., diet, clothing, rest, fitness) | 24 (5.0) |
| 4. Appropriate selection of music (i.e., within capability of performers) | 5 (1.0) |
| **TOTAL** | 177 (37.0) |
| **GRAND TOTAL** | 478 (100.0) |

The results from the Steptoe and Fidler (1987) and Wolfe (1990) studies are useful in suggesting some behavioural and cognitive strategies for the treatment of performance anxiety. Some examples would be the training of realistic cognitive self-appraisal, breathing control and relaxation. Wolfe's
study suggests that an emphasis on thorough musical preparation for performance could also be important. However, the range of the treatment strategies suggested by these studies is still limited and there is little indication of how an individual performer could best integrate the use of several strategies in coping with performance anxiety. Both studies used a survey approach which does not allow for an exploratory and detailed account of the strategies used by successful performers in managing performance anxiety. A qualitative approach using interviews can give a more intimate and detailed account. An example of this approach, on a small scale, is a series of interviews with sports competitors conducted by Anschel (1990).

In the present study, in-depth interviews were carried out. Minichiello, Aroni, Timewell and Alexander (1990) identify four aspects desirable in in-depth interviewing. First, repeated encounters between the researcher and the informant allow rapport enhancement to develop with the potential for greater understanding to follow. Secondly, the encounter is between researcher and informant, which implies an egalitarian concept of roles. Thirdly, by focussing on the informant's account as the valued one, the researcher's perspective is not seen as more valid. Finally, there is an emphasis on understanding the informant's views in a language that is natural to them.

The type of interviews conducted in this study was focussed or semi-structured interviews, with the use of an interview guide listing areas for questioning and a possible ordering of the questions. There are advantages to this type of interviewing according to Minichiello et al. (1990) in that it allows for greater flexibility than does a survey type interview and provides a more valid and detailed explication of the informant's views.
Given the time constraints high profile professional performers are subject to, it was necessary to obtain as much relevant information as possible within a restricted time limit and repeated interviews were not feasible. A detailed interview guide was developed and pilot tested so that the researcher already had a good idea of the types of questions, their wording and ordering, before embarking on the interview series (a procedure suggested by Brenner, 1985). This limited the exploratory nature of the study to some extent but it was thought that this was the best compromise under the circumstances.

The main means of ensuring internal validity in in-depth interviewing is by probing, cross-checking, recursive interviewing and rapport building (Brenner, 1985; Minichiello et al., 1990). All these means were employed in this study, although the frequency of recursive questioning was reduced through the use of a detailed interview guide. Experimenter bias was checked by avoiding leading questions and by self-reflection on the part of the researcher to avoid, as much as possible, giving greater weighting to data which fitted the researcher's theory. During the course of being interviewed several performers suggested to the researcher that it might be useful for him to interview particularly anxious performers they knew of as a means of comparison. In taking advantage of this opportunity five performers who were unable to manage performance anxiety successfully were interviewed. Such interviewing of contrasting cases of the phenomenon under inspection provides a means of testing validity (Miles & Huberman, 1984).

The most important test of the external validity (and reliability) of the study was through the implementation of the Final Study in this research series.
(see Chapter 5). The treatment program developed from this study (see Chapter 4) was tested in the Final Study. Another means of testing validity was that after the completion of the study a report of the findings was sent to each of the performers who was interviewed and they were invited to give feedback on how accurate they thought the researcher's assessment had been. As a further check on validity, it was expected that the results from this study could be compared for consistency with the findings of other related studies such as Wolfe (1990) and Steptoe & Fidler (1987).

Minichiello et al. (1990) suggest that the main means of testing reliability or the replicability of qualitative research findings is by presenting a detailed description of the procedures employed so that other researchers can attempt to replicate the findings of the research. As well as the procedures described in the Method section of this study, the provision of the interview guide (Appendix 3.3) in particular gives any future researcher a clear description of the type of questions asked.

Some consideration was given to assessing the interjudge reliability of the coding process by asking a second person other than the researcher to code the interview data. For three reasons this assessment was not made. First, the interpretation of the interview data would have been difficult without a first hand knowledge of the musical context in which the interviews were taking place. Second, the interpretation required making complex interconnections between interviewees' responses to many questions other than the one direct question on managing performance anxiety, "If you experience performance anxiety how do you cope with it?". Third, the coding process proved to be a very lengthy one and it was thought to be unreasonable to expect another researcher to take this on voluntarily. It seems to the present researcher that a more fruitful test of interjudge
reliability would be for another researcher to conduct their own interviews and then to compare their results with the present ones.

Tape recordings were made of the interviews and verbatim transcriptions onto word processor were made from these. The analysis of the data was carried out by using the computer program NUDIST (Richards & Richards, 1990). This program facilitates online text searches and code and retrieval operations which allow the researcher to gather together information on a particular issue from all the interview data. This means that comments made by interview subjects on relaxation, for example, can be compiled into one document and progressively analysed.

Overall, the aim of the present study was to ascertain the cognitive and behavioural strategies developed by successful performers to manage their performance anxiety. The study was largely an exploratory one. The musical performance anxiety literature and the sports psychology literature both suggest some specific hypotheses about strategies which may be employed by performers, such as relaxation and visualization. However, the extent to which these strategies might be employed and the ways they might be employed, remained to be determined.

Method

Subjects

Sampling
Performers were contacted through their performing organizations or where possible approached individually. The most common procedure was to send a formal letter from the Head of the Psychology Department,
University of Wollongong (see Appendix 3.1), with a covering letter, to the performer or organization. This was followed up by a telephone call from the researcher to assess the response to the letter and to arrange a meeting time.

Two methods of non-probability sampling were used.

*Theoretical sampling.* In this study the researcher chose to select subjects from several musical fields: classical, jazz and popular music. Following the approach suggested by Burgess (1984), within these sub-groups further sub-groups were selected: for example, within the classical field sub-groups consisted of opera singers, orchestral musicians, chamber musicians and concert soloists. Within these categories, further selections were made on the basis of type of instrument played, age, sex and nationality.

*Snowball sampling.* This type of sampling involves informants with whom the interviewer has already made contact suggesting names of other people who may be of interest for the researcher to interview. Several performers were suggested to the researcher by this means. In particular, all of the anxious performers (a difficult type of subject to locate) referred to below were drawn to the researcher's attention by this means. While snowball sampling occurred in several cases, performers were ultimately chosen on the basis of how they would advance the researcher's development of his model of performance anxiety.

In selecting performers two criteria were established.

1. There were several bases on which an assessment of *success* was made. For classical musicians it was expected that they had performed at a
prominent level some time in their career for a prestigious national or international performing organization such as a professional orchestra, chamber group, opera company, or as a soloist. For a jazz performer this would mean having performed for a well-known group or as a soloist. In these cases and as much as possible, performers were chosen on the recommendation of someone with an authoritative knowledge of the performers in each organization or on the researcher's personal knowledge. It was expected that most performers would have performed internationally during their career and made recordings either for a record company or for radio.

2. Only those performers who were exposed to frequent solo work were selected as this is generally accepted within the music profession to be the most stressful type of performance situation. This meant that for orchestral musicians only principals and not rank and file members were selected. Classical musicians who played in small ensembles such as string quartets were selected as this is musically a very exposed medium. Concert soloists were selected as they normally play in a featured role during performance. Jazz performers all qualified in this regard as they normally have solo or musically exposed roles when part of a band or small ensemble.

Other considerations
The researcher was successful in sampling performers from the fields of classical and jazz music but not within popular music. Many efforts were made to gain access to popular musicians who met the "successful" criteria. However, their availability was low and during the time of this study not one subject was obtained.
An attempt was made to interview as wide an age range as possible. It was expected that there would be some bias towards older performers as these were more likely to have achieved the criteria for "success". One young performer aged 16 years was selected because she was considered successful for her age even though she did not meet all the criteria for success outlined in (1). Performers were also selected on the basis of where they had completed their musical training. There was an attempt to draw on some performers who had received their basic training outside of Australia. It was thought that this might highlight differences in ways of managing performance anxiety according to national background or training.

A final consideration was one brought about by the exigencies of field research in this area. Professional musical performers have very busy lives and work irregular hours. Sometimes they do not wish to be interviewed when in the middle of a series of performances or when recording. For this reason some performers who were asked to be interviewed were not available during the course of the study. However, all the performers eventually interviewed met the essential criteria from (1) and (2) with the exception of the 16 year old performer.

Subjects were drawn from the following organizations:

- The Sydney Symphony Orchestra,
- The Australian Chamber Orchestra,
- The Australian Opera,
- The Sydney Conservatorium of Music,
- The Canberra School of Music,
- The Australian Broadcasting Commission, and
- Independent Music Agencies, as well as Individual performers.
The Australian Broadcasting Commission provided a source of featured international artists who were touring Australia performing in concert schedules around the country.

Thirty successful "non-anxious" performers were interviewed for the study. It was believed that this number would give a representative explication of the strategies used by professional performers and also be pragmatically feasible to carry out. As well as the "non-anxious" performers, five performers were interviewed who professed to experience severe performance anxiety. It was not intended that they constitute a major part of the study; however, they were included as it was thought they would provide an interesting comparison to the successful non-anxious group.

Of the non-anxious performers, 20 were male and ten female. Their ages ranged from 16 years to 68 years with a mean of 44 years. Twenty three of the performers were classical performers comprising 11 orchestral musicians, seven singers, four pianists and one conductor. The jazz performers all performed in small jazz ensembles. In terms of origin of training, 21 of the performers had received their principal training in Australia, four in Europe, two in Britain, one in the USA, one in Russia and one in New Zealand.

Of the anxious performers three were male and two female. All were classical performers comprising two guitarists, two pianists and one woodwind player. All had received their principal training in Australia. Two had performed at a professional level, two were students studying music at a tertiary institution, and one was a music teacher and amateur performer. Only the two who performed at a professional level met the same criteria for selection as the non-anxious performers.
Procedure for the Interviews

The Time Schedule
Performers were interviewed over a period of six months.

The Materials
Interviews were recorded using a Sony Walkman connected to a sensitive and small microphone placed between the interviewer and subject. After the researcher gave a brief statement of the purpose of the study, a consent form (see Appendix 3.2) was given to the performer to read and they were asked if they had any further questions. Then both the performer and the researcher signed the form. The performers readily consented to the interview being recorded. During the interview, notes were also taken.

The Interview Guide
An interview guide was developed for this study containing a list of questions to be asked and a preferred order in which to ask them. The wording was constructed in a way that would reduce the chance of the researcher asking leading questions. Probes were frequently used when the researcher wanted further explication of the performers' ideas. Wording of questions was changed occasionally to fit in with the language of the performer or to enhance the natural flow of conversation. The ordering of the questions was funnelled so that more general and less pertinent questions were asked first. The interviews were conducted in a conversational style to encourage performers to elaborate on the questions raised by the researcher and the ordering of questions was sometimes changed to further enhance the natural flow of the conversation. As the series of interviews progressed and different lines of questioning became
more or less fruitful, some questions were emphasized more and others less.

The interview guide was composed of several sections of questions (see Appendix 3.3). The first two sections contained questions of a biographical nature and questions on lifestyle. All the following sections consisted largely of open-ended questions relating to aspects of performing, performance anxiety, the psychology of performing, questions on individual strategies for preparation of performing and general comments.

The Pilot Test

The questions for the interview guide were derived from several sources: the researcher's personal knowledge, discussions with musical associates, discussions with clinical psychologists with a specialist interest in anxiety, reading of the music literature and sports psychology literature. The questions were constructed to fit in with the three systems model of anxiety outlined in Chapter 1. Once an initial set of questions had been devised, two clinical psychologists were consulted to check for bias in the questions and to seek their opinion on the suggested ordering and content of the questions.

To test the appropriateness of the questions and to gauge the time taken for an interview, the questions were piloted with three separate musicians, two of whom were associates of the researcher. The three musicians included a rank and file orchestral musician (violinist), a teacher/performer (pianist) recently returned from studies in Europe, and a concert pianist touring for the Australian Broadcasting Commission. These performers were asked if the wording of the questions was readily understandable to them, whether the questions elicited responses which seemed relevant to the issue being
addressed, whether the questions biased their answers, and whether the questions had a logical sequence to them. This procedure helped to enhance the validity of the procedure. Modifications to the interview guide were made following the completion of these test runs.

Interviews were kept to approximately one hour. Performers were not paid for their time.

The Interviewer
All interviews were conducted by the researcher.

Analysis of the Data

The coding process employed followed guidelines suggested by Minichiello et al. (1990) and Miles and Huberman (1984). The texts of each interview were read and searched for themes. Once initial themes were derived these were given names and then became codes. The researcher was particularly looking for codes which described the strategies performers employed, either directly or indirectly, to manage performance anxiety. The coding process was facilitated not only by the researcher's access to the written transcriptions of interviews but also by impressions of the performers gained during the interviews. A further consideration was the importance of coding being carried out in the context of the whole text and not just subsections of it in isolation, a point emphasized by Minichiello et al. (1990). Once the first level of codes had been derived the frequency of responses for these codes was calculated (see Appendix 3.4). These frequencies were used as a guide to the importance of the coping strategies these codes
The strategies were then grouped under the broader categories of musical, cognitive, behavioural and lifestyle.

The final part of the analysis involved drawing out the interconnections between the strategies that performers used to manage performance anxiety so that a pattern of use could be highlighted.

The interviews with the anxious performers were analysed along the same lines as for the non-anxious performers so they could be directly contrasted with them.

Results

Non-anxious Performers

The Nature of Performance Anxiety

It seems that even successful performers experience performance anxiety. All the performers interviewed admitted to having experienced symptoms of performance anxiety to varying degrees. No symptoms of performance anxiety stood out as common to all performers. Instead, there was a wide array, with physical symptoms tending to dominate.

The most frequently mentioned symptoms included general tension, shaking of various parts of the body, increased cardiovascular activity, negative thoughts, sweating and clamminess, hot or cold flushes, nausea, dry mouth and "butterflies". The instances of dry mouth were restricted mostly to woodwind players and to one singer. Other symptoms were
increased breathing rate, severe apprehension, distracted thoughts, isolating behaviour, memory blanks, increased visits to the toilet, adrenaline rush and dullness.

Performers were more likely to experience anxiety in performance situations where they felt more exposed musically. These performing situations included especially important concerts, concert recitals, and concerto performances. Other performing situations which were referred to less commonly were first nights, recording sessions, playing particularly difficult pieces or roles, and formal concerts rather than informal ones for jazz musicians.

Performers often went through different phases of experiencing performance anxiety during their careers. Early in the performer's career performance anxiety tended to be at its worse. This was usually at a time when the performer was a student or just establishing his/her professional career. For most, the ability to manage performance anxiety increased with experience. Experienced performers might still experience increased performance anxiety later in their careers when they took on a new challenge such as, for example, an orchestral musician becoming a Principal in an orchestra.

Performance anxiety for me was worse in the very beginning ... you've got the difficulty of "How can I get my first engagement", "Who's going to bother engaging me" ... it's the doubt again - "Is my first concert going to be good enough for them to ask me to do another one" and gradually as time goes on and you get a repertoire under your belt and you get used to the whole business, you relax. (Conductor)

I think it is improving if anything, I'm getting better at it from experience. When I first started I really was not cut out for it and it's taken some years to really understand it, experience it enough to learn how to deal with it better. (Flautist)
Causes of Performance Anxiety

The three most common causes of performance anxiety identified by the performers were:

• Not being sufficiently prepared for a performance

...the two main things for me is a feeling of inadequate rehearsal, preparation for whatever reason that may be. (Pianist)

• A general sense of insecurity the performer may feel as a result of their personality or psychobiological state. This "weakness" comes out under performance conditions.

I think it could go back right to when you were small, having to live up to either your teacher's expectations or your parents' expectations or your own ego... (Pianist)

Some people are more ... susceptible than others because ... again of the way their nervous system is built you can find some people can be extremely nervous ...

(Flautist)

• Being unable to perform the music required not because of under-preparation but because of a lack of ability, for example, students who ambitiously try to perform above their level.

Other causes referred to included being focussed more on yourself rather than the music being played, feeling the pressure of expectations from others, and performance anxiety being a natural result of simply putting yourself "on the line" in performance.
**Benefits of Performance Anxiety**

While all the performers experienced performance anxiety they indicated that they were mostly able to keep it under reasonable control. They were asked to rate how well they managed their performance anxiety on an 11-point rating scale ranging from a score of zero for "no control" to 10 for "complete control". A summary of the scores is given below.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Freq.</th>
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<tbody>
<tr>
<td>0-5</td>
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</tr>
<tr>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
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</table>

Mode = 8  
Range = 4 (6 - 10)  
Standard Deviation = 0.9  
Mean = 7.9

Only one performer gave a rating of 10, indicating he thought he had complete control of performance anxiety. Ninety per cent of the performers gave a rating of 7 to 9, indicating they believed they generally had reasonable control of their performance anxiety. Two performers scored 6, indicating that their control was less certain.

The large majority of performers indicated that they believed performance anxiety could be useful when under control as well as being harmful when out of control. Only one performer did not believe there were any beneficial effects of performance anxiety. The main ways in which they thought performance anxiety could be beneficial were:
• It gives the performer a "hyped up", excited feeling as they approach the performance.

I couldn't perform without it. I would always have it ... I've always had it ... I don't even know what it is to be without it. I wouldn't want to perform without it. (Jazz singer)

I don't think it is harmful at all. Like I said if you didn't have it you'd be dead. (Jazz saxophonist)

• It helps the performer achieve a mental focus and alertness that is beneficial to performing.

There can be a heightening too of mental process, I think always an edge of performance anxiety is necessary. (Flautist)

• It can provide an extra source of inspiration which might not occur in a non-performance situation.

I've found very often if I've gone up on stage and I'm not nervous I don't give my best performance. In fact it's probably the most correct performance but it's missing something. (Pianist)

Managing Performance Anxiety

The performers used a large array of long-term and short-term strategies to manage performance anxiety. In the long-term, performers mostly relied on musical strategies for preparing for performance. As the performance came closer they relied more on psychological strategies, both cognitive and behavioural. It became clear that performers mostly managed performance anxiety by preventing it from happening in the first place, as well as having emergency means of controlling it "on the spot" as it arose.

When initially coding the results of the strategies for preparing for performance, strategies were divided into four categories: musical,
psychological, physical and organizational, as these came directly out of the
questions asked during the interviews (see Appendix 3.4). Further analysis
suggested a division into musical, cognitive, behavioural and lifestyle
categories would be more consistent with a cognitive and behavioural
model of performance anxiety while acknowledging the role of lifestyle
factors in the preparation for performance. These categories are not
completely independent and necessarily contain some overlap.

Cognitive Strategies
The types of cognitive strategies most commonly used by performers
included the use of positive self-talk, visual rehearsal, task oriented
thinking, "loss of self" and mental rehearsal of the music. Not all
performers used all these strategies and there were other strategies that were
used less commonly as well as these ones mentioned here.

A large number of performers used positive self-talk as a way of preparing
for performance while a smaller number did not. Even the most proficient
and experienced performers felt moments of self-doubt before going on
stage. Self-talk tended to be used closer to the performance as a way of
affirming the performer's sense of self-worth and preparedness. Many
performers used standard reminders to themselves as a way of achieving
this.

If it was a really big occasion and I really felt "I hope I can do well"... I would then
give myself a little lecture on the fact that I had been cast in this role as that must
mean that there was no-one else around who could do it as well at that stage...
think about the fact that I've done it before, why not be able to do it again, and
that my voice was born with me and my talent was born with me. I would know
that I had done everything to learn the role and prepare the role well and I would
have given myself a chance physically to be ready for it and then just go and do it.
(Opera singer)

I'm a firm believer that fear breeds fear, panic breeds panic, success brings success,
in other words I try and always think very positively. But that's probably one
thing which I've always tried to do and people say, "How do you feel, are you
nervous"; I used to always say "No." These days I'll say "Oh no, I'm fine" or I'll say "There's always some nerves but ..." – in other words, I try and be as honest as I can and just think positively. (Flautist)

The large majority of performers used some form of visual rehearsal as a way to prepare for performance. To do this they rehearsed the performance situation by visualizing themselves going onto the stage, playing through the performance and acknowledging the audience at the finish. Performers felt this helped decrease the shock and novelty of actually being on stage.

I can sit there and imagine myself walking on stage, I don't know where, wherever... you train it, it's like a flight simulator. (Violinist)

Opera singers used visualization in a slightly different way. They visualized the scenes they were to act in and used the visualization process as a way of rehearsing their actions in these scenes.

I'll visualize where I am on stage, and going through the movements. (Opera singer)

By the nature of what they do performers are frequently hearing music "playing in their head" in an apparently haphazard way. While preparing for a particular performance this internal music takes on a more purposive form and performers mentally rehearse the music they are preparing for. This can happen at any time and may or may not be planned.

... before the concert or even earlier than that, if it's a difficult piece and I'm working on it at home, I often mentally rehearse when I'm driving the car or walking down the street when I haven't got the instrument with me. (Trombone player)

The performance goals performers set for themselves appeared to have particular importance in their being able to manage performance anxiety. These goals tended to take the focus away from the audience as being
threatening and seeing the performance as an opportunity to inspire and entertain the audience. Generally, performers reasoned that audience members have attended a concert because they want to hear a good performance and not to find fault with the performer.

... ultimately to reach the audience or part of them... and move them in some way... perhaps take them out of themselves ... maybe if they've got problems or worries that they forget those for a while and enjoy life and enjoy the experience. (Jazz pianist)

For several performers entertaining the audience was not their primary goal. They considered it more important that the performer realize his/her own musical expression through the performance while being true to the composer's intent as they understood it. At the same time, they felt it necessary that the performer enjoy the performance, as well as the audience.

I know you've got to enjoy it before they do, I think that is very important, if you don't enjoy it yourself you do lessen the chance of them enjoying it. (Jazz violinist)

I would consider the composer first and then I consider myself second, in spite of the fact it's all for the sake of the audience but I'm still trying to re-interpret. (Clarinetist)

Many performers mentioned that it was important to do your best and try and come as close to technical perfection as possible, although others cautioned against slavishly putting this goal before all else.

To do the best performance that I can do both vocally and dramatically. (Opera singer)

I feel that the only way that I can really make a good performance of anything is to go with the flow in the music and forget about the technique. Once I'm in there I should be making music and not playing notes... (Trombone player)

Because of the improvisational nature of jazz, being true to the composer's intentions was not seen to be as relevant as it was for the classical performers. Instead, for the jazz performers there was a sense in which they
aimed to be true to themselves – something they found difficult to express in words.

... there is a sort of feeling of rightness about something that I will get and it will vary from moment to moment but whatever it is at the time I try to go for that. (Jazz guitarist)

... you've got to actually feel it, you can't just sing, you have got to feel it. You've got to believe it. (Jazz singer)

... being very spontaneous making every note come out to be as spontaneous as possible and fluid and as emotional as possible. (Jazz saxophonist)

Quite a few performers emphasized the importance of "loss of self" during the performance. Loss of self was the opposite of excessive self-consciousness and egoistic concern with "How am I doing?". "Loss of self" represented a kind of third person orientation in which the performer acts as a vehicle through which the music is played, almost acting as an observer.

I've found the most important formula is to focus, not on myself, but on the music or on a kind of "it". "It" that plays, not I play and I can fail but "it" will play. (Violinist)

I'm just doing the physical work and the music is working ... you just feel a peace within yourself which is ... I can't describe it you tap into something which isn't you and you're just an instrument for it to flow. (Violinist)

Before a performance performers tried to achieve a particular performance focus which set them up psychologically for the performance. This was quite individual but the performance focus they adopted was one which they had derived from experience and one which they were not always conscious of adopting. Several psychological strategies were used to achieve the preferred performance focus.
One strategy was to progressively narrow the mental focus as the performance approached. One way of achieving this was by becoming more task oriented in thinking. Task oriented thoughts were thoughts concerned with the mechanics and dynamics of performing rather than non-task oriented thoughts which had only peripheral relevance to the task (performing) in hand.

I think fear is related to thought, ... because you think about all the things that can go wrong and therefore you feel very dreadful. The moment you don't think those things, the moment your thought is completely concentrated on what you do, there's no fear, there's no anxiety, that's the way I perceive it. (Cellist)

Just concentrate ... on what I'm going to do ... on mostly the fundamentals of my instrument as far as gathering my thoughts ... making sure my basic fundamentals such as embouchure and technique are in place, very basic things as a tool you need to start playing. (Jazz saxophonist)

Some performers described a process of "clearing" or "emptying out" the mind before going on stage.

Make sure that I don't have a cluttered brain ... because you have to have a pure mind to be able to ... get through it. (Violinist)

... in a way I have to almost empty out myself so that I've got ... room to go. (Opera singer)

Many performers were aware that their alertness and excitement grew in anticipation of the performance and were conscious of controlling their build-up. For this reason they felt it important to maintain a calm and relaxed attitude as much as possible during the day of the performance.

Well I like to use the word "psyching yourself" in a way ... I have to control my build-up to the performance because of what's happening if I get myself excited too early, I have to stay very excited for a very long time and that often interrupts me in performance. (Opera singer)

Getting yourself feeling very calm is good and slowing down your reactions. (Jazz violinist)
The performer needs to maintain a performance focus not only before the performance but also during the performance. The performer can become distracted by thoughts about the audience and thoughts about peripheral matters. They can also be influenced by factors outside their control such as bad acoustics, lighting, temperature variations, etc.

Before and during the performance there is not much awareness of the audience. Mostly the performer is fully involved in the performance and their awareness is on the music with an awareness of the audience being secondary to this.

I don't think about the audience in that sense... I think about them in an eye contact sense. It's difficult ... you have to have eye contact but you don't see them. (Jazz singer)

Making mistakes is a reality for all performers. Most performers have learnt that once a mistake is made it is best not to dwell on it. They try and accept it as a past event and to maintain their focus on the present. Even though the performer may deal with the mistake effectively they can still feel very annoyed or let down, but they try to keep this emotional response in check.

I've got to consciously forget them. The worst thing you can possibly do is to dwell on them .... What you've got to do is try and convince them that what they heard was not a mistake but was what the composer originally wrote or was a mishearing. (Pianist)

Negative criticism of a performer made after the performance can influence the performer's level of anxiety during subsequent performances. It is a necessary part of the performer's professional development to learn how to deal with any type of criticism. Most performers were very discerning about the value they placed on criticism obtained from certain people. Criticism from respected colleagues was usually greatly appreciated. Colleagues were
seen as having the best understanding of what goes into music making and, as a consequence, their remarks about improvements were valued as being of practical use. The audience was viewed differently. On the one extreme the audience members were seen as not being very discerning at all and not able to tell a good performance from a bad one. On the other extreme the audience, or members of it, were seen to be very intelligent musically and able to make judgements on a performance in a way a musician with professional involvement cannot. Music critics were seen in a very bad light. The large majority of performers did not find the remarks of critics useful at all.

Normally critics say things in flowery terms ... rarely is there something which you can take note of from a critic and do something the next night. (Flautist)

**Behavioural strategies**

The majority of performers indicated an acute awareness of their levels of physical arousal and muscular tension when approaching a performance. Many used behavioural techniques to maintain their physical arousal at an optimum level and to reduce tension before the performance. This was particularly important on the day of the performance.

One of the common techniques employed by performers was to slow down their *breathing* rate and breathe in a more diaphragmatic way. While some practised diaphragmatic breathing in a systematic way, others simply relied on taking a few slow, deep breaths before walking on stage. Most performers carried out these exercises instinctively and had not been taught them formally. The singers, woodwind and brass players who would normally be taught breathing techniques as part of their musical tuition mostly gave the impression that they were not taught how to use breathing as a means of relaxation.
Before I go on stage ... I'll do some deep breathing just to sort of settle the nerves. (Opera singer)

Just deep breathing, slow, it's very relaxing, it's good for you. (Conductor)

Roughly half the performers used some form of relaxation to reduce bodily tension. Some of these had formally learnt specific techniques, e.g., autogenic training, but many had worked out their own forms such as massage or simply lying down on the floor thinking relaxing thoughts.

I just relax it, just put your mind to that muscle and just relax it. (Violinist)

... I'm making sure that my neck and my shoulders are loose, all my tension goes to my neck. I've been having massages lately to try and get rid of this tension in my neck ... deep breathing, trying to maintain a calmness in yourself ... (Opera singer)

Gaining extra sleep by sleeping in on the day of the performance or, more commonly, by taking a mid-afternoon nap of half an hour to two hours on the day of the performance, was considered very valuable by most performers.

I prefer to have a little lie down in the afternoon on the day of the performance. (Clarinetist)

I'll sleep in, I'll sleep as late as I possibly can. (Opera singer)

On the day of performance many of the performers liked to rest and take it easy and avoid having to deal with other demanding responsibilities as much as possible.

... a pretty relaxing afternoon, doing nothing just thinking about it (the performance). Occasionally I'll go out and mow the lawn or something like that to take my mind off it altogether ... I try and keep as cool and detached from anything that's going on here at home as possible. (Double bass player)
Opera singers rest the voice by avoiding talking unnecessarily and instrumentalists are conscious of not using their hands doing strenuous or repetitive work.

A large number of performers carried out some form of *physical activity* before performing. Such activities included stretching, warm-up exercises, yoga, finger exercises, the Alexander Technique. Although the activities varied, the chief purpose was to loosen the muscles, reduce tension, increase blood circulation and correct posture. Quite a few performers did not do any form of physical preparation before performance, suggesting, it was a very individual choice.

... things like just bending over from the waist and letting the muscles relax. (Opera singer)

On the day of the performance it appeared that the majority of performers had a *pre-performance routine* which they have worked out for themselves and which they liked to follow whenever possible. Simply having a routine appeared to give the performer a greater sense of security and allowed the build-up to the performance to be smooth, controlled and inevitable. The routine leads the performer into the right performance mode both musically, physically and psychologically.

As part of the routine it was important for the performers to *arrive early* for a performance so they had time to set up their equipment or instrument in an unhurried fashion and to feel the performing venue was familiar to them before the audience arrived. At the performing venue itself, many performers liked to have some *time alone* before going on stage, to achieve their performance focus.
I don't like to talk to people before I go on very much... I'm usually a bit short with people at that time. (Jazz singer)

Get there on time and relax. I don't like to rush in coat tails flying. I like to be there on time and have a cup of coffee and tune up. (Jazz guitarist)

As part of the pre-performance routine the emphasis on sleep, rest and avoidance of people and distractions allows the performer's arousal levels to remain low while controlling the build-up to the performance. Psychologically, the routine helps the performer to achieve the right performance focus. Musically, the routine provides the assurance that the musical touch and sound is there.

Well the first thing is I really want to forget that there's a concert until the occasion arises. I went out onto the harbour this morning for a nice boat trip, had a nice lunch and then we walked all the way back .... then before you came I had an hour ... a good nap and then when we're finished this interview I'll go and have a jolly good shower or a bath and shave and shampoo and it sets me up, that's the count-down as I call it. I always like to get to the venue in plenty of time to get used to the sort of ambience ... I take quite a long time to get into my clothes and into my dinner suit and usually walk around a bit, I suppose it must be a sort of nerves ... There's a sort of enthusiasm, I quite look forward and can't wait to get on and see how it goes ... My routine is I have to have it I have to do it ... even to the extent that I suppose if my wife's around for too long I tell her to bugger off, I like to be alone for 10 minutes ... I'm probably thinking about one or two tricky corners of the piece coming up ... probably thinking of the basic tempo for the first few bars. (Conductor)

Musical strategies

Musical preparedness was seen by performers as essential in the management of performance anxiety. In this regard, long-term rather than short-term preparation was highly emphasized. If a performer was able to feel they had prepared sufficiently well for a performance, this gave an enormous boost to their confidence. For the classical performers, musical preparation requires a lot of technical preparation of the piece(s). For soloists, memorizing the music can also be involved. As well as the technical practice, the interpretative aspects of the music are worked out and
practised. Opera singers have to develop their characterization. For the classical performer a great deal of solid daily practice is required. For the jazz performer less daily practice is required because of the improvisational nature of the music. However, it is necessary for them to keep their "chops up" which necessitates maintaining a good technique and fluency in playing. These aspects can be achieved through practice, rehearsal and performance.

I do quite a lot of basic technical work on a regular basis, and coming up to a major performance I increase that rate to as much as I can bear to do or as much as there is practical time to do without trying to wear myself out. (Flautist)

You try and keep your chops up, as we say in jazz. Try to keep your technique up by just being in good shape on the instrument. You either practise or if you've done a lot of work, if you've done a lot of performances that in itself is enough. (Jazz guitarist)

Part of the long-term practice schedule for most performers involved them practising performing. They did this either by simulating the performance during their practice or exposing themselves to preparatory performances by playing for family, friends or associates. Completing preparatory performances gives the performer an opportunity of playing under performance conditions and obtaining feedback about their playing. It also means that by the time they reach the "real" performance it is not the first time they have played their music under performance conditions. During this period performers also looked for insight by listening to recordings of the music they were to play and undertaking personal research.

When I'm by myself I even bow at the end and get up and actually go through it because I feel that really helps. (Pianist)

... as I get closer to a performance I much more think of performing in practice. When I'm practising, I'm stopping and going over things backwards and forwards, when I'm practising to perform I don't stop at all. (Flautist)

I usually make a point of recording most rehearsals particularly with piano. Getting comments from other people and playing to other people. (Violinist)
Most of the performers liked to *tailor off* their practice during the last week prior to the performance this helped them keep physically and mentally fresh. On the one to two days before the performance they might only do sufficient practice to keep their fingers or vocal chords working. There was a recognition that last minute practice can be detrimental to the performance as it can raise the performer's anxiety and tire out the fingers and creative impulse. Some performers instead of physical practice used mental rehearsal of the music by reading through the score and words of their performance at this time.

A good *warm-up* on the instrument, or with the voice, prior to the performance was considered very important by most performers. As well as physically preparing the performer, this also had the psychological effect of reassuring them that their sound was there.

I have a warm-up, a standard warm-up which I use as well. (French horn player)

*Lifestyle*

In terms of general lifestyle there was very little to indicate that the performers were particularly different from the general population although they did make some adaptations which were in keeping with managing performance stress.

The amount of daily *sleep* they gained falls into the normal range. Where they might be different from non-performers is that their work required them to often work late nights and this meant they probably slept more during the day than the average worker.
The performers as a whole did not seem to be a particularly fit group of people. There was a general awareness that exercise is good for overall health and some saw exercising as being of benefit for performing and some saw it as having no benefit. Slightly more than half the performers engaged in regular aerobic exercise of at least a moderate level. There was little change in exercise routine coming up to a performance. For those who did exercise regularly there sometimes was a drop-off in exercise before performance because of the extra time taken up in rehearsals.

Most performers described their diet as healthy or balanced. Detailed enquires about diet were not made but the impression gained was that performers were generally well-informed about diet and its effects on health. Coming up to the performance most performers' diets changed so that the major meal of the day was taken some hours before the performance and there was an emphasis on eating sustaining foods.

Intake levels of caffeine varied from none to high. Caffeine was the drug that performers most commonly reported using regularly with 69 per cent consuming moderate to high levels of caffeine. Coming up to the performance there was little variation in intake levels.

Twenty one per cent of performers refrained from drinking alcohol altogether. Sixty four per cent were regular moderate or social drinkers, and 14 per cent were in the high consumption level. Coming up to performance one of the performers indicated an increase in intake of alcohol, about one half continued at their usual level and about a half reduced their intake. Most performers reported having a cut-off time before performance beyond which they would not drink alcohol. For some this meant not drinking the night before and for others this meant having a small drink at their last
main meal on the day of the performance. The majority of performers did not smoke tobacco at all, and there was little variation in this pattern coming up to performance.

Very few performers indicated a regular use of *drugs* either prescribed or non-prescribed. Three performers regularly took beta blockers because these were prescribed by their doctors for hypertension. Six performers indicated they had experimented with taking beta blockers at some time in their performing careers and occasionally still used them.

A half of the performers took *natural remedies* such as vitamin pills and garlic on a regular basis. Those who commented on their reasons for doing so said it was because they thought it improved their general health and some thought it helped them cope with the stress of performing more effectively. Coming up to the performance several performers took natural remedies as a way of preparing for the performance.

Figure 3.1 presents a summary of the main short- and long-term strategies used by the performers in preparing for performance. Appendix 3.5 presents an illustrative case example of a non-anxious performer who uses many of these strategies, although not all.
Figure 3.1

<table>
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<th>COGNITIVE</th>
<th>BEHAVIOURAL</th>
<th>LIFESTYLE</th>
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<td>Various physical activities</td>
<td>Maintaining physical health</td>
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<td>Mental rehearsal of music</td>
<td>Time alone before performance</td>
<td>Resting on day of performance</td>
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<tr>
<td>Preparatory performances</td>
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<td>Following pre-performance routine</td>
<td>Adapting eating and drinking pattern</td>
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<td>Simulating performances</td>
<td></td>
<td>Relaxation and breathing</td>
<td>Napping/extra sleep</td>
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<td><strong>Short-term:</strong></td>
<td><strong>Short-term:</strong></td>
<td><strong>Short-term:</strong></td>
<td><strong>Short-term:</strong></td>
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<tr>
<td>Tailoring off practice</td>
<td>Performance goals</td>
<td>Performance goals</td>
<td>Arriving early for performance</td>
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<td>Warm-up on instrument</td>
<td>&quot;Loss of self&quot;</td>
<td>&quot;Loss of self&quot;</td>
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<td></td>
<td>Task oriented thinking</td>
<td>Excited and alert attitude</td>
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<td>Positive self-talk</td>
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<td>Visual rehearsal</td>
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<td>Mental rehearsal</td>
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<td>Calm and relaxed</td>
<td>Calm and relaxed</td>
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Training and Education

Without exception all the performers indicated they had had no formal training on how to deal with performance anxiety. The main methods of gaining information had been through self-exploration by reading and experimenting with different strategies, advice from colleagues, and help from teachers and non-music professionals.

No, I've just used my intuition and what little common sense I have. (Violinist)

I used to read books about self-control, especially when I was younger. (Jazz violinist)
... when I first went into the opera the more experienced colleagues, so many of them were helpful, conductors, coaches, producers. (Opera singer)

It's always been something which has worked through self-discovery more than anything else, and out of autogenic training, I have done that. (Violinist)

A large majority of performers said they thought that some education of performers was beneficial. A small number of these indicated that this education should only be provided for performers who were experiencing difficulty with performance anxiety. These performers felt that general instruction on performance anxiety could create problems for those who were not already having trouble with it. Two performers indicated that they felt no education in managing performance anxiety should be given at all. One of these said that it is up to individual performers to learn to manage performance anxiety by themselves, while the other thought being given plenty of opportunities to perform in public was sufficient.

Of the performers who indicated that some education was beneficial and desirable, various strategies were suggested. The most commonly mentioned ones were to provide tuition in specialist anxiety management techniques such as breathing, relaxation, meditation, posture and concentration which could be provided by non-music professionals; provide discussion and explanation of the issues involved in performance anxiety; and emphasizing the constructive uses of performance anxiety.

I would tend to apply techniques like Alexander Technique or Autogenic Training or something like this ... so I think it's more important first of all to have a relaxation tool which works fairly automatically and then build (this) within the teaching pattern. (Violinist)

... to start with very mild remedies, ask why do they think they're nervous, do they not know the piece, are they not well ... What is in their mind, are they afraid of failing, don't they like the people they are working with, do they expect someone antagonistic to be in the audience, ... just try to make it possible for them to analyze their own fear and to find out what it could possibly be for themselves. (Opera singer)
With students from 17–24 years it should be emphasized that performing is very different from practice and by experiencing performing you realize how different it is from practice. Some people think something is wrong when they experience anxiety. (Cellist)

Other strategies mentioned included developing performance anxiety education as part of the early training of the performer, providing exposure to performing, being given support from colleagues and teachers, and performers finding their own way of dealing with it.

**Coping with Performance Anxiety when it Happens**

While performers had an array of means of preparing which allowed their performance anxiety to remain at manageable and constructive levels, they also employed strategies to deal with performance anxiety when it occurred unexpectedly. These strategies tended to be psychological in nature and able to be employed "on the spot". The most frequently mentioned strategies were using positive self-talk, using breathing exercises, and employing task oriented thinking. Some performers also mentioned the strategy of keeping going by "pushing" through their anxiety.

**Anxious Performers**

Contrasting the anxious performers with the non-anxious performers highlighted differences in the use of strategies for managing performance anxiety. All the anxious performers were similar to the non-anxious performers in that they put in sufficient musical preparation to perform well. However, they were less able to prepare themselves for performance in other respects. The anxious performers perceived great expectations being placed on them either by themselves and/or others. For this reason,
they tended to be very self-conscious when playing and demonstrated a lack of a constructive performance focus.

Well in a bad performance I don't feel like I'm focused on the music, I feel a bit like an observer. ... and you sort of make all these bizarre comments as you're playing and somehow this automatic pilot keeps playing but it's not very effective. And the notes may come out, they may not, you're not really a full on participant. And you're quite bored and you start daydreaming, it's pretty bizarre actually. (Student guitarist)

For one of the professional performers the pressure came from himself and not from others. He had, as he described it, an obsessive need to achieve a level of perfection in his performances that was realistically unobtainable. This meant that the slightest error in his performance would greatly disturb him and he would consider it an unsuccessful performance. As a consequence, he felt that he had never had a successful performance. He indicated that his negative assessment of his performances was independent of the audience assessment. In fact, he found audiences usually received his performances very well.

Generally, the anxious performers lacked techniques for preparing themselves for a performance in ways other than musical. The music teacher said her one experience of a successful performance occurred when she had sought help from a hypnotherapist to prepare for an important music examination. He was able to teach her how to relax under hypnosis and visualize herself successfully completing the performance. She practised this procedure regularly up to the examination and found she was able to exercise confident control throughout the performance. She had since found that whenever she played any of the pieces she had prepared for this examination she was able to play with concentration and control. However, whenever she performed a different piece she was as anxious as
usual, suggesting that her anxiety management strategies had not generalized to other pieces.

Although the anxious performers often incorporated some of the preparation strategies used by the non-anxious performers, their application of the strategies was not necessarily successful. The orchestral student musician indicated that she implemented many constructive preparation strategies for performance. These included visual rehearsal of the performance, mental rehearsal of the music, positive self-talk and simulating the performance. She did not use relaxation and breathing exercises because when she had tried them in the past they had not worked. Immediately before the performance she used "hyping up" self-talk such as, "you're going to be good" and she liked to take her mind off the performance as much as possible. Despite her high arousal level before performance her self-talk tended to place an emphasis on "hyping up" rather than "hyping down". Her denying that the performance was going to happen demonstrated a fear reaction (threat) rather than an excited reaction (challenge).

Although the anxious performers were very individualistic in the ways they prepared for performance an illustrative case study of one of the professional musicians is given in Appendix 3.6.

Performers' Comments on the Interview Process

All the performers, except one, indicated they had found the interview to be either interesting, enjoyable or at least straightforward. The one performer who did take some objection to the process said she had found some of the
questions irritating while she had found the others interesting. She also said it was not a topic she liked to talk much about.

Another performer, while not objecting to the interview itself, did not think his answers could be very useful. However, the majority of performers who commented directly on the usefulness of the interview indicated otherwise. For example, one jazz pianist said, "I think the questions are very kind of soul searching questions ... they seem to be striking at the very essence of what you're trying to find out. I think they're good questions for what you're trying to find out."

A large number of the performers said the interview had made them think about aspects of their performing which they had not consciously thought of or spoken about before the interview and it had been helpful for them in clarifying their ideas.

... basically (I) found the interview very enjoyable actually because I haven't thought about a lot of things. I may have thought about them in the distant past but I've never been asked directly ... it's raised quite a number of things for me to think about as well. (Conductor)

Well it was fairly straightforward and interesting. I mean, you know, talking about it helps you come to terms with it. (Opera singer)

One touring performer more used to the standard journalistic interview which he had clearly grown a little tired off expressed this sentiment: "It was a different type of interview. It wasn't the standard interview where they ask you how you feel about some person, it was very objective, it was more about the musicians and what goes on with the musicians." (Jazz saxophonist)
In conclusion, it would appear that the interviews touched on areas that the performers thought worthwhile for the purpose of the study and had stimulated and maintained their interest.

Feedback on the Interviews

As an important test of validity, after the interviews had been analyzed the researcher distributed a report to all the performers who had been interviewed. This was sent approximately 12 months after the performers were interviewed. This report contained a description of the findings of the interviews with a request for performers to return comments on the findings to the researcher. Four performers returned comments, including: the orchestral violinist and the teacher/performer pianist who had taken part in the pilot testing of the interview guide, and a jazz singer and flute player from the Canberra School of Music where the researcher was working at the time. Although this is an unrepresentative sample of the performers interviewed, it still provided the researcher with an indication that these performers believed the results were an accurate assessment of their views on performance anxiety. Roland (1992) reported on the findings of this study in a presentation to professional music educators and performers. Feedback from this presentation indicated that the audience believed these findings to be representative of their performing experience.

How Professional Performers Manage Performance Anxiety

The results suggest that the experience of performance anxiety is common to all performers at whatever level of performing, or type of performing they are engaged in. They also suggest that the nature of the symptoms of performance anxiety experienced by performers are very individual. These
symptoms can be more or less apparent during different periods of the performer's career, or in different performing situations. The performers interviewed viewed performance anxiety as a natural part of performing and, with one exception, thought it had a useful role to play when under control. Most did not claim to have full control over it and, in fact, saw complete control as detrimental to the performing process. They felt that some performance anxiety created an edge of uncertainty in performance which allowed for spontaneity, excitement and the unexpected to happen, all qualities desirable in a good performance.

The results indicate that the performers interviewed had developed psychological, musical and lifestyle strategies for managing performance anxiety. Most of these strategies were employed to prevent excessive build-up of performance anxiety before it occurred. They could also be employed "on the spot" as the situation required. The musical strategies were mostly employed during long-term preparation for performance, with the important ones being thorough practice of the pieces to be performed, and preparatory performances.

The psychological strategies tended to be used more in short-term preparation and incorporated both cognitive and behavioural strategies. The cognitive strategies included the use of positive self-talk, visualization of the performance situation and stage movements, mental rehearsal of the music, setting of performance goals, attempting to achieve a "loss of self" during the performance, engaging in task oriented thinking, feeling excited by the performance and wanting to enjoy it, assuming a positive attitude towards the audience, not dwelling on mistakes or on factors outside of the performer's control, and dealing effectively with personal negative criticism.
The behavioural strategies included the use of breathing, relaxation, sleep, physical activity, and following a pre-performance routine. The lifestyle strategies involved some adaptations in lifestyle, maintaining general health, and adjusting alcohol and food intake before performance.

The performers had mostly arrived at these strategies themselves through self-exploration and advice from other performers, teachers and non-music professionals. Not all the performers used all these strategies and some emphasized the use of certain strategies over others. Most importantly, whatever the strategies employed, the performers had worked out some system of preparing themselves for performance, as well as, preparing the music required. Performers often implemented the strategies in an habitual fashion without necessarily thinking about their reasons for doing so.

The anxious performers applied to varying degrees the strategies used by the non-anxious performers. Their failure to reliably manage performance anxiety seemed to be due to one or more of several reasons: they lacked a comprehensive system of strategies, did not implement individual strategies effectively, their past experiences of failure compounded their difficulties, they showed a tendency towards generalized anxiety and not just in performance, other circumstances intervened e.g., a change in instrumental technique.

Most of the performers thought it would be of benefit to provide some assistance to developing performers, at least in helping them understand the processes involved in performance anxiety. The results suggest that for performers experiencing severe performance anxiety the usual means of
assistance within the music profession is likely to be insufficient and the help of non-music professionals may be necessary.

The results from the Steptoe and Fidler (1987) and Wolfe (1990) studies, on the whole, appear to be consistent with the results from this study. Steptoe and Fidler found that anxious performers were likely to experience catastrophizing self-talk as was the case with the anxious performers in this study. They also suggested that realistic cognitive self-appraisal was more likely to be exhibited by performers experiencing medium levels of performance anxiety. The performers in this study all experienced performance anxiety to some degree and the use of positive self-talk was a common strategy used by them.

Wolfe (1990) found that of the musicians she surveyed the most commonly suggested coping strategies for performance anxiety were (refer Table 3.1) "Thorough preparation/practice/coaching", "Deep breathing/relaxation/physical activity", "Immersion/concentration on music". These strategies appear to correlate with the strategies found in this study of (refer Figure 3.1) "practice" and "familiarity with the music and style"; "relaxation and breathing" and "various physical activities"; and "loss of self" and "task oriented thinking" (respectively). Most of the other strategies described by Wolfe appear consistent with those found in this study, although, the majority of Wolfe's sample were drawn from non-professionals and ensemble players and are therefore not completely comparable with the sample in this study.
CHAPTER 4
MODIFYING THE STANDARD TREATMENT

Introduction

The review of the literature in Chapter 1 indicated that standard cognitive and behavioural treatments are effective in the treatment of musical performance anxiety. These treatments included progressive muscle relaxation, self-instructional training, rational emotive therapy, behaviour rehearsal and systematic desensitization. The results of the two preliminary studies provide a basis on which to make modifications of these standard treatments.

Review of the Findings of the Two Preliminary Studies

Preliminary Study 1 (Chapter 2) compared the relative effectiveness of self-instructional training and progressive muscle relaxation and found that the relaxation treatment was slightly more effective than the cognitive treatment. It also compared the outcome of increasing treatment time for a combined relaxation and cognitive treatment, over and above that of the individual treatments. The results suggested that a combination treatment might require extra treatment time to reach full effectiveness and that when this occurs a combination treatment is more effective than either individual treatment.

Preliminary Study 2 (Chapter 3) found that most of the successful professional performers interviewed used elements found in both the
standard cognitive and behavioural treatments for managing performance anxiety. The performers did not necessarily apply these elements in the standard fashion that a clinical psychologist might apply them, as they had often derived them through their own experience. The strategies used by the performers included various ways of achieving bodily relaxation (progressive muscle relaxation and autogenic relaxation), alteration of breathing patterns (breathing control), the use of positive self-talk (self-instructional training), visual rehearsal of the performance scene (a feature of systematic desensitization) and preparatory performances (behaviour rehearsal). That these successful performers incorporated such strategies in their pre-performance routine gives empirical support for the application of standard cognitive and behavioural treatments featuring these strategies.

The results of Preliminary Study 2 also suggest other strategies which might usefully be added to a standard treatment regime. New behavioural strategies might include following a pre-performance routine, altering eating and drinking patterns before performing, and taking extra sleep before the performance. New cognitive strategies might include mentally rehearsing the music to be played, visually rehearsing the performance, engaging in task-oriented thinking, setting performance goals, and attempting to achieve a state of "loss of self".

The treatment model outlined in Chapter 1 (Diagram 1.2) indicated that in the treatment of the anxious musical performer it is critical for the performer to shift from a cognitive appraisal of the performance as threatening to an appraisal of it as challenging. The large majority of the performers interviewed in Preliminary Study 2 verified that they felt a "nervous" excitement, which they saw as constructive, when approaching a performance. They suggested that some performance anxiety, when under
control, contributed to this excitement. This finding supports the notion of appraising the performance as challenging.

The five anxious performers interviewed in Preliminary Study 2 all perceived the performance as threatening in some way. In terms of treatment, therefore, it seems justifiable to place an emphasis on encouraging the anxious performer to change their appraisal of the performance as threatening to an appraisal of it as challenging. The treatment model suggests that an appraisal of the performance as challenging will be facilitated by the application of cognitive and behavioural treatment strategies which lead to a greater sense of self-control in the performer.

The successful performers in Preliminary Study 2 did not all use the same strategies for managing performance anxiety. Some relied more on behavioural strategies rather than cognitive strategies, and vice versa, and many used a combination of both types. Furthermore, within each strategy performers applied different methods; for example, some used a progressive muscle method of relaxation, others used a more autogenic style, and others used variations on these. The methods of breathing control ranged from prolonged, slow diaphragmatic breathing to simply taking a few deep breaths. Within the cognitive strategies there was also considerable variation – for example, in the types of positive self-talk or task-oriented thinking each performer used.

Offering a variety of strategies and methods within a treatment programme would appear to be an important way of enhancing commitment to the treatment. In a review of stress reduction techniques Lehrer and Woolfolk (1984) suggest that "the motivational techniques on particular individuals
may be among their most important differential characteristics (in preventing treatment dropouts). Some people prefer to meditate, some to relax their muscles, some to talk about their thoughts and feelings, and others to use machines. A sensitive therapist will take these factors into account in designing a treatment" (p 445).

**Modifying the Standard Treatment**

In developing and modifying the treatment approach for anxious performers the results of the preliminary studies and the research literature provide several indications:

1. To offer "new" cognitive and behavioural strategies in addition to standard ones, such as following a pre-performance routine, mental and visual rehearsal of the performance, engaging in task-oriented thinking, and setting performance goals.

2. To provide a combination of cognitive and behavioural strategies and allow for the possibility that some performers will tend to favour certain strategies over others.

3. To offer a variety of methods within each strategy to match individual preference — for example, offering different relaxation methods. Concurrently with this, to not over-emphasize the usefulness of any one particular method.

4. It is critical that the anxious performer be sufficiently well prepared musically for a performance. If a performer has developed inadequate
practice and learning habits they would need to rectify these outside of treatment.

5. It is desirable that performers maintain good lifestyle habits which lead to the maintenance of physical health and allow the performer to meet their personal and professional needs.
CHAPTER 5
TESTING A STANDARD AND MODIFIED TREATMENT
(Final Study)

Introduction to Previous Research

In Chapter 4 useful ways of modifying standard cognitive and behavioural treatments for musical performance anxiety were discussed. This chapter describes a study designed to test the effectiveness of a modified treatment for musical performance anxiety, with a standard treatment comparison, and a no-treatment control.

In keeping with the conclusions drawn in Chapter 4 both the treatments offered combined behavioural and cognitive components. Both the treatments included relaxation as the main behavioural method; however, on the basis of the results from Preliminary Study 2 (Chapter 3), it was decided that performers were more likely to respond to a choice of relaxation methods rather than only one. For this reason, the standard treatment offered both progressive muscle relaxation and an autogenic training style relaxation, while incorporating breathing control. Lehrer and Woolfolk (1984), in a review of studies comparing the effectiveness of autogenic training in stress reduction, found that autogenic training appears to have a greater effect on autonomic measures than either progressive muscle relaxation or EMG biofeedback and that the latter two produce greater decreases in muscular tension than autogenic training. This research evidence underlines the value of offering an alternative relaxation technique to suit individual preferences.
Studies comparing live versus taped progressive muscle relaxation training have indicated a greater effectiveness for live training sessions over taped sessions (Lehrer & Woolfolk, 1984). While keeping the live training sessions it was decided in this study to supply each performer with a relaxation tape containing both the progressive muscle and autogenic relaxation exercises as a way of enhancing relaxation practice outside of the live training sessions.

The behavioural component of the modified treatment included the same relaxation elements as the standard treatment. However, an additional element was the inclusion of a pre-performance routine. The modifications of the standard treatment mostly occurred within the cognitive component. Training in self-instructional training was omitted and replaced by various other elements. These included: training in task-oriented thinking; setting performance goals; and visual and mental rehearsal of the music.

Self-instructional training views cognitions as self-instructions which determine response patterns. Where these response patterns are maladaptive more adaptive cognitions can be learnt. Task-oriented thinking, on the other hand, implies the use of the appropriate focus for each task being engaged in. This notion is in keeping with the concept of attentional control (Nideffer & Sharpe, 1978) which has been developed from the sporting context. Attentional control training distinguishes between different attentional styles such as narrow versus broad focus, and external versus internal focus. Nideffer and Sharpe suggest that each type of focus is more or less appropriate according to the task being engaged in.

Öst and Jansson (1987) have emphasised the importance in anxiety treatment outcome studies of assessing all three systems of anxiety. It was
decided to include in this study a physiological measure of anxiety as a way of providing a more comprehensive test of the treatment model outlined in Chapter 1. Heart rate has been shown to be a useful psychophysiological measure of anxiety (Papillo, Murphy & Gorman, 1988). The measurement of heart rate also has an advantage over more invasive types of physiological measures in that it can be reliably measured in a naturalistic setting with minimal interference to the person being measured.

Aim and Hypotheses

The aim of this last study was to compare the effectiveness of a modified cognitive and behavioural treatment with a standard cognitive and behavioural treatment. The experimental method used in this study was based on that employed in Preliminary Study 1 (Chapter 2) with some minor modifications. As part of the experimental design, the Standard Treatment and Modified Treatment groups were compared with a Waiting-list Control group. Because the Modified Treatment more closely mirrored the approach of successful performers in managing musical performance anxiety, it was anticipated that it would prove superior to the Standard Treatment in reducing musical performance anxiety. It was hypothesized that both the experimental treatments would be more effective than the waiting-list control in reducing musical performance anxiety.

Method

The Subjects and Setting

To be eligible to participate in the study subjects were required to be at least 15 years of age, to have reached at least Grade 5 on the Australian Music
Examination Board examinations and to have a score of five or more on the Report of Confidence as a Performer Scale (RCPS; Appel, 1974). The RCPS is a measure of previous severity of performance anxiety. Scores on this scale range from 0 to 15 with scores of five and above considered to indicate above-average performance anxiety (Kendrick et al., 1982). Twenty-nine females and four males participated in the study. Ages ranged from 15 to 54 years. The mean age of subjects was 24.7 (SD = 10.1) years, the mean time of playing their instrument was 12.2 (SD = 10.2) years and the mean length of time they had experienced performance anxiety was 9.6 years (SD = 7.8). Musicians were referred by their teachers or responded to advertisements.

Of the 46 musicians and singers who applied to participate in the study, nine of these were screened out as they did not fit all the criteria for selection. Thirty seven commenced the study (Standard Treatment, n = 12; Modified Treatment, n = 12; and Waiting-list Control, n = 13), and of these, four dropped out between the pre-test and post-test, leaving 33 subjects who completed the study (Standard Treatment, n = 12; Modified Treatment, n = 10; and Waiting-list Control, n = 11; see Table 5.1).

Table 5.1  
*Numbers of subjects selected for the study*

<table>
<thead>
<tr>
<th>No. who applied to participate in study</th>
<th>No. who commenced study at pre-test</th>
<th>No. who completed study</th>
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<tr>
<td>46</td>
<td>37</td>
<td>33</td>
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Ten subjects were drawn from the Canberra School of Music and 23 from the local Canberra community. The instruments played by the musicians were piano (19), woodwind (4), strings (3), brass (2), classical guitar (2), and there were three singers.
Means and standard deviations for age, years of reported performance anxiety, years of playing their instrument, treatment expectancy scores, completion of homework exercises and RCPS for the subjects are given in Appendix 5.1. One-way ANOVA tests conducted on these variables indicated there were no significant differences \( (p > .05) \) between groups (see Appendix 5.2).

**The Apparatus**

For the participants who were not students from the Canberra School of Music, public recitals were held in a small music auditorium in the School of Music and a Yamaha mini-grand piano was used on each occasion for pianists. Each recital was attended by members of the public and relatives of the performers with the audience size being approximately 20-30 people on each occasion. For participants who were students from the School of Music, recitals were held during their weekly performance classes where the audience comprised fellow students and music staff. A digital audio recording of each performance was made by the School of Music's sound technician.

**The Outcome Measures**

1. The State Scale of the State-Trait Anxiety Inventory (STAI; Spielberger *et al.*, 1970) was administered to subjects 15 minutes before they entered the auditorium to perform.

2. The Musical Performance Anxiety Self-statement Scale (MPASS; Craske, Craig & Kendrick, 1988) was administered immediately following the completion of each subject's performance. The scale
assesses the frequency of performers' positive and negative self-statements, before, during and after a performance. Although the MPASS variance scores had been high in Preliminary Study 1 (Chapter 2), it was decided to use this measure once again. It was believed by the researcher to still be the best measure of the frequency of positive and negative self-statements relating to performing, available at the time.

3. The Self-efficacy Scale asks performers to rate their degree of confidence for the performance they are about to give from 0 (not at all confident) to 100 (completely confident) without experiencing anxiety to an extent that it would interfere with their performance. This scale was adapted for performers from Bandura's Self-efficacy scale by Craske and Rachman (1987). Although this measure was not included in Preliminary Study 1 it was decided to include it here as an additional cognitive measure to the MPASS.

4. Performance quality (PQ) was assessed by two judges who were experienced music lecturers and examiners from the Canberra School of Music. They were asked to rate each performance on a ten point scale using standard criteria for judging examinations in instrumental playing and in vocal performances. The criteria used included stylistic awareness, spontaneity of performance, attention to rhythm, tempo, dynamics and notation. Judges worked independently from copies of the music score and audio-tape recordings of each performance. Two procedural modifications from Preliminary Study 1 were made to enhance interater reliability:

(i) Before rating the test pieces, the judges were given two non-test recordings to listen to, and were asked to rate these as a trial run. They were then brought together to compare each other's ratings and to discuss how they had used the judging criteria to assess
performance quality. This was an attempt to ensure that standard criteria were being applied in the judging process.

(ii) After all the recitals had been completed each of the performers' test pieces were re-recorded from the master tape onto a second tape so that they followed each other sequentially but still in a random order. This made it easier for judges to assess the relative qualities of a particular performer's performance. Judges were blind with respect to subjects' group membership and order of performance. For the PQ measure Kendall's coefficient of concordance was calculated to assess interater reliability. The results (pre-test, $W = 0.93$; post-test, $W = 0.86$; follow-up, $W = 0.84$; where $W = 0$ indicates no agreement and $W = 1$ indicates perfect agreement) suggests a high degree of concordance (Hays, 1988) which is higher than that found in Preliminary Study 1. The average of the two judges' scores was used in the analysis.

5. Heart Rate: A Polar Vantage XL Heart Monitor was used to measure performers' heart rates at 15 second intervals starting ten minutes before the performance, during the performance (lasting approximately two to seven minutes according to the length of the piece being played) and 15 minutes after the performance. Performers wore a chest band which made contact with the skin around the heart region. A paste was smeared onto the sensors of the chest band to enhance conductivity. A wrist monitor, slightly larger than a normal wrist watch, was worn by the performer or attached to their belt. The wrist monitor registered signals from a transmitter attached to the chest band and stored these in its memory for later output. Heart rate was used as a measure of physiological arousal.

6. Treatment Expectancy: the same therapist was used in both treatment conditions. Three measures of treatment expectancy were made
adapting a procedure employed by Sweeney and Horan (1982). At the end of the first treatment session and after the rationale for their particular treatment had been given, subjects were asked to rate, on a ten point scale, how confident they were that the programme just described to them would enable them to control their performance anxiety (Expect1). At the end of their final treatment session subjects were asked to rate four measures on ten point scales: (i) how logical did they think the training programme was, (ii) their confidence that they would be able to manage their performance anxiety successfully, (iii) how enthusiastic did they feel the trainer was in presenting the programme, and (iv) how competently did they think the trainer presented the programme. The scores from questions (i) and (ii) were combined to give a measure of treatment demand characteristics (Expect2). The scores from questions (iii) and (iv) were combined to give a measure of perceived therapist involvement and competency (Expect3).

The Procedure

Assessments were made at a pre-test recital, one week before commencement of the treatment, at a post-test recital, one week after treatment and at a follow-up recital, five weeks after the post-test recital. It was specified that the test piece subjects performed for each recital be a self-selected work of three to six minutes' duration, one which they had mastered technically and had performed previously in public. Subjects played in a different random order at each recital. They were randomly allocated to either the standard treatment, modified treatment or the waiting-list control groups. Following the pre-test recital performers were informed that, because of the large numbers of people interested in
participating in the study, some would have to be allocated to a waiting-list. In a procedure suggested by Marks (1984; cited in Öst & Jansson, 1987) to enhance the effectiveness of the control group, those on the waiting list were informed that they would be able to join another treatment group some time in the near future, without an exact date being specified. Closer to the post-test recital those on the waiting-list were informed of the commencement of a new group starting after the recital and were asked to participate in that recital. Following this recital the control group members were given the modified treatment.

Treatment sessions for the standard and modified groups were run over four two-hour sessions with sessions held weekly. The treatment sessions were conducted over four weeks to fit in with the constraints of the academic year at the Canberra School of Music.

A one year follow-up to the study was conducted. All subjects were sent a questionnaire by mail (see Appendix 5.3) asking them to rate their current levels of performance anxiety and the quality of their playing compared with their levels prior to commencement of the treatment programme. The questionnaire also asked for ratings of how useful subjects thought each of the specific treatment strategies had been.

The Treatment Sessions

Standard Treatment (ST). The first session for the ST began with the therapist giving a description of the physiological, behavioural and cognitive responses to stress ("fight or flight response") in the context of musical performance anxiety. Subjects were able to discuss how their symptoms related to the fight or flight response. They were introduced to
the model of performance anxiety (from Chapter 1) and discussion took place on how performing could be appraised as either challenging (excitement) or threatening (anxiety). The idea of approaching the performance with a sense of challenge was supported by the therapist explaining the inverted-U hypothesis and reference to the experience of successful professional performers. Subjects were then taken through the progressive muscle relaxation exercise (PMR; Goldfried & Davison, 1976). At the end of the session subjects were presented with the rationale for their particular treatment programme and asked to fill out the first treatment expectancy measure (Expect 1). As part of their homework, subjects were asked to practise PMR daily with the use of the relaxation tape. They were each given a relaxation tape recorded by the therapist to use at home. This tape contained both the relaxation exercises used in the programme, progressive muscle relaxation and autogenic relaxation. Subjects were asked to monitor during the week the ways in which they experienced muscle tension and methods they used for relaxing.

In the second session subjects were introduced to the concept of self-talk and how self-talk can affect the outcome of behaviour. The ways in which self-talk could be destructive in general life and in performance were discussed. Examples of negative self-talk were used to demonstrate how negative self-talk could be changed to realistic, positive self-talk. Subjects were then taken through the autogenic relaxation exercise and shown the use of breathing control (Davis, Eshelman & McKay, 1988). For homework they were asked to monitor their self-talk in stressful situations and practise realistic and positive self-talk. They were asked to practise breathing control and the autogenic relaxation exercise daily with the use of the relaxation tape.
The third session discussed the use of self-talk during performance. Subjects were shown how to construct positive self-statements for the following categories:

- Preparation for Performance
- Confronting the Performance
- During the Performance and
- Completion of the Performance.

Subjects were taken through the autogenic relaxation exercise. For homework they were asked to develop a list of positive and realistic self-statements in each of the four categories and asked to practise breathing control and the relaxation exercise of their choice, daily.

In the fourth session there was revision of the self-statement lists that subjects had devised. There was also discussion of how subjects could apply the relaxation exercises they had learnt to performance preparation. Subjects were taken through the relaxation exercise of their choice (as a group), either PMR or autogenic relaxation. There was general revision of what they had learnt from the course. Following this, each subject was asked to fill out the second expectancy assessment.

*Modified Treatment (MT).* The first session of the MT was the same as the first session of the standard treatment and subjects were given the same homework exercises.

In the second session subjects were introduced to the concepts of task-oriented thinking and setting performance goals. Examples of how distracted thinking reduced concentration on the performance were discussed. Task-oriented alternatives were presented. Subjects set
performance goals for themselves and these were contrasted with the types of goals observed by the therapist in successful performers. Subjects were taken through the autogenic relaxation exercise and shown the use of breathing control. For homework they were asked to develop a list of task-oriented thoughts, and a list of performance goals. They were asked to practise breathing control and autogenic relaxation exercise daily with the use of the relaxation tape.

The third session covered the notion of the pre-performance routine. The pre-performance routine included aspects such as relaxation, musical practice, mental rehearsal of the music, sleep, general activities, the warm-up and any other aspects of preparing for a performance. Subjects were taken through the autogenic relaxation exercise. For homework they were asked to develop a pre-performance plan, and asked to practise breathing control and the relaxation exercise of their choice, daily.

In the fourth session subjects were given instruction on how to visually rehearse successfully coping with a performance. They were also given instruction on how to mentally rehearse the music they were preparing for performance. There was discussion of how subjects could apply the relaxation exercises they had learnt to performance preparation. Subjects were taken through the relaxation exercise of their choice (as a group), either PMR or autogenic relaxation. There was general revision of what they had learnt from the course. Following this each subject was asked to fill out the second expectancy assessment.

The Therapist

The researcher acted as therapist for each of the two treatment groups.
Results

_Preliminary Analysis_

There was one between subjects factor with three levels: Standard Treatment (ST; \( n = 12 \)), Modified Treatment (MT; \( n = 10 \)) and Waiting-list Control (WLC; \( n = 11 \)). There was one within subjects factor with three levels – pre-test, post-test and follow-up for the Standard and Modified Treatment groups – and two levels for the Waiting-list Control group: pre-test and post-test. To measure treatment effect there were three self-report measures: STAI (state anxiety), MPASS (self-talk), SE (self-efficacy); one behavioural measure, PQ (performance quality); and one physiological measure, HR (heart rate). HR was further divided into three separate measures.

Analysis of variance (ANOVA) was carried out separately on the pre-test scores for STAI, SE, MPASS and PQ and no significant differences between groups were found on these variables (\( p > .05 \); see Appendix 5.4). Means and standard deviations for these dependent variables are presented in Table 5.2. Analysis of covariance (ANCOVA) was carried out on the pre-test scores for HR and no significant differences between groups were found (\( p > .05 \); see Appendix 5.5). Means and standard deviations for HR are presented in Table 5.3.
Table 5.2
Means (standard deviations) for the Standard, Modified and Control groups at pre-test, post-test and follow-up.

<table>
<thead>
<tr>
<th></th>
<th>STAI</th>
<th>MPASS</th>
<th>SE</th>
<th>PQ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong> (n = 12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>58.3 (6.9)</td>
<td>-30.6 (50.2)</td>
<td>31.7 (18.4)</td>
<td>45.7 (18.3)</td>
</tr>
<tr>
<td>Post</td>
<td>47.0 (10.4)</td>
<td>53.0 (58.5)</td>
<td>58.9 (13.0)</td>
<td>47.7 (20.3)</td>
</tr>
<tr>
<td>Fol</td>
<td>42.8 (9.9)</td>
<td>53.4 (75.7)</td>
<td>64.2 (15.0)</td>
<td>46.0 (18.8)</td>
</tr>
<tr>
<td><strong>Modified</strong> (n=10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>58.9 (7.6)</td>
<td>23.0 (57.4)</td>
<td>40.5 (13.6)</td>
<td>57.9 (16.7)</td>
</tr>
<tr>
<td>Post</td>
<td>44.0 (8.3)</td>
<td>71.8 (42.7)</td>
<td>61.5 (18.1)</td>
<td>57.9 (19.0)</td>
</tr>
<tr>
<td>Fol</td>
<td>41.9 (8.6)</td>
<td>81.3 (41.5)</td>
<td>68.0 (10.1)</td>
<td>58.9 (18.4)</td>
</tr>
<tr>
<td><strong>Control</strong> (n=11)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>53.7 (15.1)</td>
<td>-25.0 (76.5)</td>
<td>49.7 (20.1)</td>
<td>48.6 (21.8)</td>
</tr>
<tr>
<td>Post</td>
<td>52.5 (10.0)</td>
<td>3.0 (74.6)</td>
<td>36.8 (22.6)</td>
<td>52.5 (21.9)</td>
</tr>
</tbody>
</table>

*Note:*
STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self-statement Scale;
SE = Self-efficacy Scale;
PQ = Performance Quality.

Table 5.3
Heart rate means (standard deviations) for the Standard, Modified and Control groups at pre-test, post-test and follow-up.

<table>
<thead>
<tr>
<th></th>
<th>HRb</th>
<th>HRd</th>
<th>HRa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong> (n=7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>115.6 (21.9)</td>
<td>136.4 (24.7)</td>
<td>115.1 (18.7)</td>
</tr>
<tr>
<td>Post</td>
<td>113.3 (20.9)</td>
<td>139.3 (19.6)</td>
<td>110.1 (16.3)</td>
</tr>
<tr>
<td>Fol</td>
<td>106.5 (11.8)</td>
<td>128.9 (12.0)</td>
<td>112.6 (9.3)</td>
</tr>
<tr>
<td><strong>Modified</strong> (n=10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>98.4 (13.9)</td>
<td>124.8 (16.2)</td>
<td>112.5 (17.1)</td>
</tr>
<tr>
<td>Post</td>
<td>102.8 (13.1)</td>
<td>123.0 (16.1)</td>
<td>109.1 (19.2)</td>
</tr>
<tr>
<td>Fol</td>
<td>99.6 (15.6)</td>
<td>120.8 (17.7)</td>
<td>111.1 (18.6)</td>
</tr>
<tr>
<td><strong>Control</strong> (n=9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>110.4 (8.7)</td>
<td>138.1 (12.5)</td>
<td>127.4 (11.0)</td>
</tr>
<tr>
<td>Post</td>
<td>103.4 (15.8)</td>
<td>129.7 (18.0)</td>
<td>129.7 (18.3)</td>
</tr>
</tbody>
</table>

*Note:*
HRb = Heart rate one minute before performance;
HRd = Heart rate for the first minute during performance;
HRa = Heart rate for the first minute after performance.
Treatment Outcome

The assumptions of normality and homogeneity of variance-covariance were met. One of the subjects from the standard treatment group failed to attend the post-test recital. In a procedure for predicting missing values in repeated measures designs (Tabachnick & Fidell, 1989), post-test scores for this subject were calculated using regression equations on the group follow-up means, for each dependent variable. The analysis of HR was treated separately from the other dependent variables. The heart rate data for five of the subjects from the ST group and one from the WLC group were lost because of an error made by a computer technician. This reduced the sample sizes in the ST (n = 7) and WLC (n = 9) groups for the heart rate analysis.

An overall MANOVA conducted with the four dependent measures STAI, MPASS, SE and PQ, over the pre-test to post-test period indicated a significant group x time x measure interaction was present, $F(6,90) = 3.36, p = .005$ (see Appendix 5.6). Four within subjects MANOVAs were conducted and significant group x time interactions were found for STAI, $F(2,30) = 3.83, p = .033$ and SE, $F(2,30) = 13.57, p = .000$ (see Appendix 5.7). For MPASS there was a tendency towards a significant group x time interaction, $F(2,30) = 2.81, p = .076$ (see Appendix 5.7). There were main time effects for STAI, SE and MPASS. There were no significant interaction nor main effects for PQ (see Appendix 5.7). This indicates that none of the groups experienced a change on PQ during the pre-test to post-test period.

Figures 5.1, 5.2, 5.3, and 5.4 suggest that the two treatment groups responded very similarly to treatment with the main differences occurring between the treatment and control groups from pre-test to post-test. To test this
conclusion, MANOVAs were conducted on STAI, MPASS, SE and PQ for the ST and MT groups, without the inclusion of the WLC group, for the pre-test to follow-up period. The results indicate there were no group x time interactions or group main effects for either STAI, MPASS, SE, or PQ (see Appendix 5.8). There were significant time effects ($p < .001$) for STAI, MPASS and SE but not for PQ. These results suggest that the ST and MT groups responded to treatment in a similar fashion as indicated by the scores on STAI, MPASS, SE and PQ, at post-test and follow-up. Both groups also experienced changes over time on STAI, MPASS and SE. Thus, the ST and MT groups appear to differ from the WLC group in their response to STAI, MPASS and SE but not to PQ.

Figure 5.1 indicates that following treatment the ST and MT groups experienced a decline in state anxiety at post-test and this decrease continued at follow-up. In contrast, the WLC group showed little change in state anxiety at post-test. Figure 5.2 indicates that following treatment the ST and MT groups experienced an increase in positive self-talk and this increase was maintained at follow-up. In contrast, the WLC group showed an increase in positive self-talk which was much less than for the ST and MT groups. Figure 5.3 indicates that following treatment the ST and MT groups experienced an increase in self-efficacy which continued to increase at follow-up. In contrast, the WLC group showed a decrease in self-efficacy at post-test. Figure 5.4 indicates that following treatment the ST and MT groups experienced no substantial change in performance quality at post-test or follow-up, with the WLC group experiencing a very slight increase at post-test.
Figure 5.1
Mean scores on state anxiety (STAI) for pre-test, post-test and follow-up

Figure 5.2
Mean scores on self-talk (MPASS) for pre-test, post-test and follow-up
Figure 5.3
Mean scores for self-efficacy (SE) for pre-test, post-test and follow-up

Figure 5.4
Mean scores on performance quality (PQ) for pre-test, post-test and follow-up
To explore the precise source of differences between groups at post-test and follow-up, univariate analysis of covariance (ANCOVA) contrasts were conducted. The scores at pre-test were used as the covariate. The results of these analyses are shown in Table 5.4. The results confirm the earlier conclusion that neither the ST nor MT groups differed from each other at post-test or follow-up, on any of the dependent variables. Thus, the ST and MT groups were combined and contrasted with the WLC group. These contrasts indicate that the treatment groups differed significantly from the control group on STAI, MPASS and SE but not on PQ.

Table 5.4
Between group contrasts using analysis of covariance for the Standard (ST), Modified (MT) and Control (WLC) groups.

<table>
<thead>
<tr>
<th>Contrast</th>
<th>Variable</th>
<th>F (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test</td>
<td>ST vs MT</td>
<td>STAI</td>
<td>.63 (1,29)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MPASS</td>
<td>.22 (1,29)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE</td>
<td>.02 (1,29)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PQ</td>
<td>.42 (1,29)</td>
</tr>
<tr>
<td>Post-test</td>
<td>ST + MT vs WLC</td>
<td>STAI</td>
<td>5.60 (1,29)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MPASS</td>
<td>6.31 (1,29)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE</td>
<td>18.93 (1,29)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PQ</td>
<td>1.21 (1,29)</td>
</tr>
<tr>
<td>Follow-up</td>
<td>ST vs MT</td>
<td>STAI</td>
<td>.25 (1,19)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MPASS</td>
<td>.83 (1,19)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE</td>
<td>.02 (1,19)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PQ</td>
<td>.07 (1,19)</td>
</tr>
</tbody>
</table>

Note:
STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self statement Scale;
SE = Self-Efficacy scale;
PQ = Performance Quality.

Earlier MANOVA tests indicated main time effects for STAI, MPASS and SE. To investigate these effects further, related t-tests were conducted to assess within group change from pre-test to post-test and from pre-test to follow-up. These results are shown in Table 5.5. For the pre-test to post-test
period the ST group showed significant improvement on STAI, MPASS and SE. The MT group showed significant improvement on STAI and SE but with no change on MPASS. The WLC group showed a significant improvement on MPASS, a significant decrement on SE and no change on STAI. For the pre-test to follow-up period both the ST and MT groups showed significant improvements on STAI, MPASS and SE.

Table 5.5
Within group change for the Standard (ST), Modified (MT) and Control (WLC) groups (related t-tests).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-test to Post-test</th>
<th>Pre-test to Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ST</td>
<td>MT</td>
</tr>
<tr>
<td>STAI</td>
<td>3.89**</td>
<td>5.58***</td>
</tr>
<tr>
<td>MPASS</td>
<td>5.51***</td>
<td>2.06</td>
</tr>
<tr>
<td>SE</td>
<td>6.37***</td>
<td>2.53*</td>
</tr>
<tr>
<td>PQ</td>
<td>1.98</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note:
STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self statement Scale;
SE = Self-efficacy Scale;
PQ = Performance Quality.

Significance * p < .05, ** p < .01, *** p < .001

The analysis of heart rate was carried out using multivariate analysis of covariance (MANCOVA). The heart rate measure five minutes before performance was used as a covariate with a different covariate being used at pre-test, post-test and follow-up. Heart rate was separated into three phases: heart rate one minute before performance (HRb), heart rate for the first minute during performance (HRd), and heart rate for the first minute after completion of performance (HRa). Means and standard deviations for HR are presented in Table 5.3. Adjusted means for HR are presented in Appendix 5.9.
An overall MANCOVA performed on HRb, HRd and HRa for the pre-test to post-test period, found a significant group x time x phase interaction, $F(4,45) = 2.96, p = .030$ (see Appendix 5.10). Three within subject MANCOVAs were conducted and a significant group x time interaction was found for HRd, $F(2,22) = 3.91, p = .035$ (see Appendix 5.11). A main group effect was found for HRb, and a main time effect tending towards significance for HRa (see Appendix 5.11).

Figure 5.5 indicates that following treatment the ST and MT groups experienced an increase in HRb at post-test with a decline at follow-up to below pre-test levels. In contrast, the WLC group experienced a drop in HRb at post-test. Figure 5.6 indicates that following treatment the ST group experienced an increase in HRd at post-test with a drop to below its pre-test level at follow-up. The MT group experienced little change at post-test and a drop at follow-up. In contrast, the WLC group experienced a drop at post-test. Figure 5.7 indicates that following treatment the ST and MT groups experienced very little change in HRd at post-test with a slight drop at follow-up. In contrast, the WLC experienced a drop at post-test.
Figure 5.5
Adjusted mean scores on heart rate before performance (HRb) at pre-test, post-test and follow-up

Figure 5.6
Adjusted mean scores on heart rate during performance (HRd) at pre-test, post-test and follow-up
To further investigate the source of between group differences for HRb and HRd analysis of covariance comparisons were performed on post-test scores using as covariates the heart rate measure five minutes before performing, and the pre-test scores of these variables. Pairwise comparisons of each individual group were performed (see Table 5.6). The results indicated that the ST and MT groups did not differ significantly from each other on HRb or HRd. However, the ST group \((p < .01)\) and the MT \((p < .05)\) group did differ significantly from the WLC group on HRb. The ST group \((p < .01)\) differed significantly from the WLC group on HRd but the MT group did not.
Table 5.6
Between group contrasts using analysis of covariance for the Standard (ST), Modified (MT) and Control (WLC) groups for heart rate at post-test.

<table>
<thead>
<tr>
<th>Contrast</th>
<th>Variable</th>
<th>F (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST vs MT</td>
<td>HRb</td>
<td>.69 (1,21)</td>
<td>.416</td>
</tr>
<tr>
<td></td>
<td>HRd</td>
<td>2.96 (1,20)</td>
<td>.101</td>
</tr>
<tr>
<td>ST vs WLC</td>
<td>HRb</td>
<td>11.24 (1,21)</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>HRd</td>
<td>10.44 (1,20)</td>
<td>.004</td>
</tr>
<tr>
<td>MT vs WLC</td>
<td>HRb</td>
<td>7.24 (1,21)</td>
<td>.014</td>
</tr>
<tr>
<td></td>
<td>HRd</td>
<td>2.64 (1,20)</td>
<td>.120</td>
</tr>
</tbody>
</table>

Note:
HRb = Heart rate one minute before performance;
HRd = Heart rate for the first minute during performance.

A MANCOVA performed on HRb, HRd and HRa for the ST and MT groups for the post-test to follow-up interval found no significant group x time x phase interaction effect (see Appendix 5.12). Three within subject MANCOVAs were conducted and indicated no group x time interactions although there were significant main time effects for HRb, and HRd (see Appendix 5.13). These results indicate that the ST and MT groups did not differ significantly from each other in their heart rate responses following treatment during the post-test to follow-up period.

To explore the time effects further, related t-tests were performed on the HRb, HRd and HRa scores for the pre-test to post-test period and the pre-test to follow-up period (see Table 5.7). The t-test results indicate no significant changes except for the pre-test to post-test change on HRd for the control group (p < .05).
Table 5.7
Within group change for the Standard (ST), Modified (MT) and Control (WLC) groups for heart rate (related t-tests).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-test to Post-test</th>
<th>Pre-test to Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ST</td>
<td>MT</td>
</tr>
<tr>
<td>HRb</td>
<td>0.31</td>
<td>1.25</td>
</tr>
<tr>
<td>HRd</td>
<td>0.77</td>
<td>0.48</td>
</tr>
<tr>
<td>HRa</td>
<td>0.90</td>
<td>0.84</td>
</tr>
</tbody>
</table>

Note:
HRb = Heart rate one minute before performance;
HRd = Heart rate for the first minute during performance;
HRa = Heart rate for the first minute after performance.

Significance: * p < .05

The graphs of the adjusted means of HRb, HRd and HRa at pre-test, post-test and follow-up (see Figures 5.5, 5.6 & 5.7) indicate a tendency for the treatment groups to experience an elevated heart rate at post-test and a drop in heart rate at follow-up with falls to pre-test levels or lower, although these changes are not statistically significant. The changes in heart rate response appear to be greatest for the HRb and HRd variables and least for the HRa variable. In contrast to the treatment groups, the control group's heart rate response appears to drop at post-test to below pre-test levels. At post-test the heart rate response of the control group was significantly different from the treatment groups for the HRb and HRd variables, but not for the HRa variable.

The results of the one year follow-up survey suggest that subjects rated both treatments as having been successful in reducing performance anxiety and increasing performance quality (Table 5.8). The results of the ratings of the individual treatment strategies indicate that for the ST group the strategies that were most highly rated were: understanding the constructive aspects of
performance anxiety, awareness of self-talk and breathing control (see Table 5.9). For the MT group the strategies that were most highly rated were: the use of task-oriented thinking, practice of visual and mental rehearsal, and breathing control (see Table 5.10). The progressive muscle and autogenic relaxation techniques were rated as being equally effective by both the treatment groups.

Table 5.8
Means (standard deviations) for the ratings of performance anxiety and performance quality at the one-year follow-up for the Standard and Modified groups

<table>
<thead>
<tr>
<th>Group</th>
<th>a Level of Performance Anxiety</th>
<th>b Level of Performance Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 9)</td>
<td>4.3 (1.1)</td>
<td>4.1 (0.9)</td>
</tr>
<tr>
<td>Modified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 9)</td>
<td>4.2 (0.4)</td>
<td>4.4 (0.5)</td>
</tr>
</tbody>
</table>

Note: the ratings were as follows:

a  "1" = much greater performance anxiety
    "2" = slightly greater performance anxiety
    "3" = same performance anxiety
    "4" = slightly less performance anxiety
    "5" = much less performance anxiety

b  "1" = much worse performance quality
    "2" = slightly worse performance quality
    "3" = same performance quality
    "4" = slightly better performance quality
    "5" = much better performance quality
Table 5.9
Means (standard deviations) for the ratings of the usefulness of individual treatment strategies at the one-year follow-up for the Standard and Modified treatment groups.

### Standard Treatment (n = 9)

<table>
<thead>
<tr>
<th>Treatment Strategy</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding fight/flight response</td>
<td>1.4 (0.5)</td>
</tr>
<tr>
<td>Understanding constructive aspect of performance anxiety</td>
<td>1.8 (0.4)</td>
</tr>
<tr>
<td>Becoming aware of self-talk</td>
<td>1.7 (0.7)</td>
</tr>
<tr>
<td>Developing list of positive self-talk</td>
<td>1.1 (0.8)</td>
</tr>
<tr>
<td>Practising breathing control</td>
<td>1.6 (0.7)</td>
</tr>
<tr>
<td>Practising progressive muscle relaxation</td>
<td>0.9 (0.8)</td>
</tr>
<tr>
<td>Practising autogenic relaxation</td>
<td>1.1 (0.8)</td>
</tr>
</tbody>
</table>

### Modified Treatment (n = 9)

<table>
<thead>
<tr>
<th>Treatment Strategy</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding fight/flight response</td>
<td>1.3 (0.7)</td>
</tr>
<tr>
<td>Understanding constructive aspect of performance anxiety</td>
<td>0.9 (0.8)</td>
</tr>
<tr>
<td>Using task oriented thinking</td>
<td>1.7 (0.5)</td>
</tr>
<tr>
<td>Practising visual and mental rehearsal</td>
<td>1.7 (0.5)</td>
</tr>
<tr>
<td>Implementing performance goals</td>
<td>1.0 (0.7)</td>
</tr>
<tr>
<td>Practising breathing control</td>
<td>1.6 (0.7)</td>
</tr>
<tr>
<td>Practising progressive muscle relaxation</td>
<td>1.0 (0.9)</td>
</tr>
<tr>
<td>Practising autogenic relaxation</td>
<td>1.1 (0.9)</td>
</tr>
</tbody>
</table>

Note: the ratings were as follows:

"0" = not at all useful
"1" = slightly useful
"2" = very useful

The Findings From a Comparison of Standard and Modified Treatments

Overall, both the Standard and Modified treatments were superior to the no-treatment control condition in reducing performance anxiety. Contrary
to the initial expectation, the Modified treatment was not superior to the Standard treatment on any of the dependent measures. On the three self-report measures (STAI, MPASS & SE) the treatment groups were superior to the control; however, on the behavioural measure (PQ) neither the treatment groups nor the control group showed any improvement at post-test or follow-up. As can be seen from Figures 5.1, 5.2 and 5.3, the Standard and Modified treatment groups continued to maintain, or improve on, the post-test treatment gains at follow-up for the STAI, MPASS and SE measures.

On the measures of heart rate the Standard and Modified treatment groups did not differ significantly. However, both groups differed significantly from the Waiting-list Control group on the measure of anticipatory heart rate (HRb). The Standard treatment group also differed significantly from the Waiting-list Control group on heart rate during performance (HRd). At post-test the Waiting-list Control group showed a tendency to drop on all three measures of heart rate while the treatment groups showed a tendency to either increase in heart rate, or at least maintain it at pre-test levels. A possible explanation of this result is that the treatment kept the focus on heart rate for the treatment subjects, thus maintaining arousal. The drop in heart rate experienced by the control subjects may have been due to the lack of such a focus and the increased familiarity with the experimental procedures at post-test. The drop in heart rate for the treatment subjects at follow-up may have been due to a reduced focus on heart rate as they further integrated the treatment techniques they had learned. If this trend had continued it appears that a significant drop in heart rate may have occurred as a result of treatment over the long-term.
The treatment programme appears to have had the least effect on recovery heart rate (HRa) and the greatest effect on anticipatory heart rate (HRb) and heart rate during performance (HRd). It also appears that anticipatory heart rate and heart rate during performance are phases when heart rate is most likely to be sensitive to anxiety and therefore most likely to respond to performance anxiety reduction treatments.

Previous studies of musical performance anxiety have used different measures of heart rate. The studies that have used anticipatory heart rate as a measure have found that heart rate was reduced upon completion of treatment (Appel, 1974; Sweeney & Horan, 1982; Craske & Rachman, 1987). Wardle (1975), using measures of both anticipatory heart rate and heart rate during performance, found a reduction in both following treatment. Clark and Agras (1991) measured heart rate during performance. They found no change in heart rate following treatment with either drug therapy (buspirone) or cognitive-behaviour therapy. They suggest this lack of change may have been due to confounding factors, such as different levels of exertion between performers, uncontrolled use of caffeine and cigarettes before performing, and differences in cardiovascular fitness. Kendrick et al. (1982) averaged heart rate from the start of performance to the end and found no change in heart rate following treatment, highlighting the importance of distinguishing between the different phases of the heart rate cycle. James and Savage (1984), in a study using beta blockers, measured anticipatory heart rate, and found a drop in heart rate following treatment for nadolol but not diazepam. From the results of these studies it would appear that a drop in anticipatory heart rate and heart rate during performance could have been expected following treatment. That this did not occur in this study suggests either an anomaly in these results, the
effects of uncontrolled factors, or a delayed effect on heart rate which would have eventually led to a significant reduction in heart rate.

The overall results of this study suggest a difference in the cognitive, behavioural and physiological experience of the subjects following treatment. It appears that performers were thinking more confidently and positively about themselves following treatment, while maintaining a heightened state of physiological arousal, and the same level of performance quality. It appears that there was a marked difference in the "self-perception" and "other-perception" of anxiety. Such a difference is not new as early studies have shown a difference between autonomic arousal and perceived arousal (e.g., Mandler, Mandler & Uvillier, 1958; Morrow & Labrum, 1978). Karteroliotis and Gill (1987) have observed a difference in sports competitors in perceived physiological arousal and actual physiological arousal. Wine (1980) has suggested that individuals experiencing high test anxiety process an excessive amount of internal sensory information as compared with low test anxious individuals. It appears that it is the person's self-perception of anxiety which most affects their feelings about their performing. Several unsolicited remarks made by performers from the treatment groups after their post-test performance indicated that they were much happier with their second performance than with their first, even though the ratings of performance quality indicated they were playing no better. Similarly, even though their heart rate responses may not have been lower they were less concerned by it. This conclusion supports the concept of the performance anxiety model presented in Chapter 1 which emphasizes the critical importance of the performer's cognitive appraisal of the performance.
The lack of improvement in performance quality might suggest that the treatments offered are not effective in improving performance quality at all. It would seem more likely however, that improved self-perception would eventually lead to an improvement in playing. Some of the previous studies on musical performance anxiety have found this (Appel, 1974; Sweeney & Horan, 1982; Craske & Rachman, 1987; Clark & Agras, 1991) while others have not (Wardle, 1975; Kendrick et al., 1982). It may be that the treatments are effective but a longer time lag is required before performance quality would improve. One reason for this could be the operation of a ceiling effect on playing ability. The results of the one year follow-up survey indicate that subjects believed their performance quality had on average become, "slightly better" to "much better". Although this is a self-reported assessment of their performance quality it is consistent with the idea that performance quality may have taken longer to be affected by treatment. The researcher would have preferred to have offered the treatment over a period of five weeks rather than four weeks, keeping treatment time at eight hours, to allow for greater integration of treatment material. Unfortunately the constraints of the academic year at the School of Music did not allow for this.

The results of the one year survey are consistent with the conclusion that the Standard and Modified treatments were equally effective in decreasing performance anxiety as both treatment groups rated their performance anxiety as "slightly less" to "much less". The survey results give some idea of the types of individual treatment strategies which subjects believed worked most effectively for them. The use of breathing control was the most highly rated of the behavioural strategies for both groups and PMR and Autogenic Training were both rated about the same. This result is consistent with the reports from professional musicians (Chapter 3) which
indicate that breathing control techniques were more frequently employed as a means of managing performance anxiety than the more extensive relaxation techniques such as PMR or Autogenic Training.

Cognitive strategies were highly rated, suggesting subjects perceived them as being at least as important as behavioural techniques in learning to manage musical performance anxiety. The following strategies were the ones most highly rated: understanding the constructive aspects of performance anxiety and awareness of self-talk for the Standard group; and the use of task-oriented thinking and practice of visual and mental rehearsal for the Modified group.

Overall, the results indicate that the two treatments, Standard and Modified, were equally as effective as each other in decreasing the subjective experience of performance anxiety. They were not effective in increasing performance quality in the short-term, although they may possibly have affected it in the long-term. Subjects did not experience a drop in heart rate at post-test although there was a tendency for it to drop at follow-up.

It might appear from the results of the study that there is little to be gained in employing a cognitive-behavioural treatment modified to a particular client group, such as for musicians, when compared to a standard cognitive-behavioural treatment. In this regard several points are worth noting:

1. The standard cognitive-behavioural treatment was "modified" in some respects to fit the musical context. For example, the self-instruction component of the treatment involved the use of self-talk applicable to a musical context. The results of the interviews with professional
performers were used in highlighting points in the standard treatment, such as the emphasis on the constructive aspects of performance anxiety.

2. The use of the modified treatment may prove to be a valuable addition to the standard treatment when working with anxious performers, over the long-term, either in groups or individually. In such an instance an anxious performer might usefully be taught the standard relaxation, breathing control and self-instruction training techniques, followed by other elements such as task-oriented thinking, visual and mental rehearsal techniques, goal setting, and following a pre-performance routine.

3. Neither the standard nor modified treatments had an immediate effect on performance quality. Whether a time lag effect may take place remains to be investigated. However, further modifications of the standard treatment may be required to produce a more immediate effect on performance quality, if that is possible.
Introduction

The results of the present series of studies present a mixed picture of the effectiveness of different treatments for musical performance anxiety. It appears that musical performance anxiety can be treated by standard cognitive and behavioural treatments. While it was expected that modifying standard cognitive and behavioural treatments to suit a musical context would further increase treatment effectiveness, this was not the case.

The review, in Chapter 1, of the psychological treatment of musical performance anxiety indicates that some of the standard cognitive and behavioural treatments for anxiety have been effective to varying degrees. These treatments have included progressive muscle relaxation, self-instructional training, rational emotive therapy, behaviour rehearsal and systematic desensitization. The results of the present series of studies are generally in keeping with the previous findings.

Relation of Findings to Those of Previous Research

The results from the Final Study in this project indicated that the "self-perceived" measures (self-report) showed a reduction in anxiety while the "other-perceived" measures (physiological and behavioural) did not. The review of the research literature indicates that only a small number of
treatment studies have produced consistent improvements across all three response systems. The review also indicates that changes on self-report measures following treatment have been more consistently achieved than changes on behavioural and physiological measures, the latter two apparently being more resistant to treatment. What then, is the most desirable outcome for treatment?

The improvements on the "self-perceived" measures in the Final Study indicate that performers were evaluating their experience of performing in a more positive way and, as a result, were experiencing greater enjoyment in their playing. It is the belief of the present researcher that a performer primarily performs because of the sense of personal enjoyment that performing gives, a belief supported from evidence given by professional performers (Chapter 3). Enjoyment in playing is also the usual reason for a performer first learning to play music. It would appear, therefore, that the main aim of treatment for the anxious performer is to return them to an experience of enjoyment, from an experience of anxiety. It seems likely that the impetus to continue performing will not be present no matter how well a performer is playing unless the performance process is an enjoyable one for them. The present researcher has met professional performers who have considered giving away performing because of the anxiety they feel during the performance process, which is in spite of the fact that their performances may be well received publicly (the case of "Edward" in Appendix 3.6 is an example).

A common aim for performers is to improve the quality of their performance as it might be perceived by others. This would certainly be a critical aim for professional performers. The lack of improvement in performance quality of the performers in the Final Study indicates that the
treatment offered failed to achieve this desired treatment outcome. As discussed earlier (Chapter 5), this apparent lack of improvement may have been due to a time lag in improvement or the result of a ceiling effect. The lack of a significant change in heart rate underlines the uncertainty as to what type of change is to be expected in this response system.

Improvement in behavioural and physiological indices of anxiety would seem a desirable treatment outcome. The typical behavioural response measures applied in previous studies have included visual signs of anxiety and performance quality. Typical physiological response measures have included heart rate and galvanic skin response. Behavioural and physiological signs of anxiety may be observable to others, but it is the way they are perceived by the performer that is the more critical issue. In a related area, Pauli, Marquardt, Hartl, Nutzinger, Holzl and Strian (1991) have described the positive feedback loop which many researchers believe operates in the development and maintenance of panic attacks. They suggest that panic attack patients are over-attentive to bodily sensations. Such patients are more likely to engage in "catastrophic" interpretations of bodily symptoms which elicit anxiety, and which in turn lead to an increase in physiological activity and further symptoms.

The finding that the performers in the Final Study were reporting a greater degree of positive self-appraisal following treatment, while still maintaining heart rate at pre-test levels, suggests they were interpreting their heart rate response less "catastrophically", or were attending less to this response. The same principle could equally well apply to the behavioural responses of anxiety. Although the performers may not have been playing any better after treatment, they may have been interpreting their playing in a less catastrophic way, or giving less attention to it.
In summary, the present researcher believes that the principal aim in the treatment of musical performance anxiety is to reduce the self-perceived component of the anxiety response. Kazdin and Wilson (1978), in the evaluation of psychotherapy outcome, have suggested that the main criterion for success is the extent to which therapy has ameliorated the problem for which the client seeks treatment. A distinction may therefore be made between the clinical significance of therapy and the statistical or theoretical significance of treatment. Achieving improvement in self-perceived anxiety is of greater clinical significance than changes in other-perceived anxiety. In the former case, the performer is more likely to pursue continued exposure to performing, and this experience is more likely to be a positive one for them. Improvements in other-perceived anxiety, such as performance quality and heart rate, are less crucial in affecting the performer's desire to continue performing, and are therefore of less clinical importance.

Implications of the Findings for the Treatment Model of Musical Performance Anxiety

The theoretical model of the anxiety response that has been adopted in this research project has been that of the three systems model of anxiety (Lang, 1971). This treatment model (Chapter 1) implies a pivotal role for the process of cognitive appraisal. This model suggests that for the treatment of musical performance anxiety to be successful the performer must make a fundamental shift from appraising performing as threatening to appraising it as challenging. The performer is enabled in making this shift by changes in one, or more, of the three systems involved in the anxiety response. Such changes encourage the performer to regain a sense of personal control
over the performing situation, and thus, allow for a realistic appraisal of performing as challenging. What support is there from the present results for this model?

There is some experimental evidence (Hamann, 1985) and anecdotal evidence (Reubart, 1985) to suggest that some performance anxiety, when under control, is a natural part of performance and can lead to an enhancement in the quality of performance. The results of the interviews conducted in Chapter 3 with professional performers support this view and suggest that some anxiety is a desirable part of the performance process. That there are successful performers who take the view of "anxiety" as constructive, suggests that they are appraising the performance situation as challenging. This provides qualitative evidence for the treatment model.

The quantitative studies (Chapters 2 and 5) also provide some support for the treatment model. Following treatment most performers increased their levels of positive self-talk, an outcome predicted by the treatment model if the challenging orientation is adopted. However, it is less clear whether the results of the quantitative studies support predictions for the behavioural and physiological systems made by the model.

In their discussion of synchrony and desynchrony of the anxiety response systems, Hodgson and Rachman (1974) have concluded that the treatment of a phobia could only be considered fully satisfactory if there is a synchronous improvement across the cognitive, behavioural and physiological systems. In terms of treatment outcome for musical performance anxiety it might seem more satisfactory if subjects did demonstrate "improvements" on all three systems concurrently. However, Hodgson and Rachman's position, in the light of more recent evidence, appears naive (e.g., Craske & Craig, 1984). Sarason (1985) has acknowledged
the danger in such a broad conclusion and has pointed to the need for empirical investigation of the degree of synchrony or desynchrony in each of the anxiety disorders. This would seem wise, as it is not only possible for there to be desynchrony between the three systems, but also desynchrony within the same system. Weiner (1985) in a review of the research literature on endocrinal, cardiovascular and cardiorespiratory correlates of anxiety concludes that synchrony between these physiological responses can occur, but not always. He also suggests that the relationship of the responses can vary according to individual differences and the demand characteristics of the situation.

The treatment outcomes of the three systems in the Final Study were not synchronous but perhaps this is not as alarming as it might first appear. The treatment model (Chapter 1) predicts that a performer in the challenging orientation will still experience a degree of physiological arousal as a correlate to the emotional experience of excitement. Whether that degree of arousal is equal to, or different from, a performer operating in the threatening orientation, awaits further empirical investigation. Craske and Craig (1984) observed an elevation in heart rate in non-anxious performers during performance with an audience present, compared with performance without an audience. This increase in heart rate was not significantly different from the increase in heart rate, also observed in anxious performers with an audience present. The subjects in the Final Study did not experience a significant drop in heart rate following treatment even though they were apparently making less "catastrophic" cognitive appraisals of the performance situation. As several other studies have found a drop in heart rate following treatment this would seem to be the normally expected result following treatment. With the evidence
somewhat equivocal, the heart rate responses in the Final Study neither confirm nor disconfirm the treatment model.

The lack of significant change in the behavioural system in the Final Study does run counter to the predictions of the treatment model. Several other studies have found changes in the behavioural system, although not all. The relaxation treatment in Preliminary Study 1 (Chapter 2) did produce an improvement in the behavioural system, although the combination treatment did not. In general, the evidence suggests that changes in the behavioural system may be more resistant to treatment and may take longer to have an effect. Such resistance may be a reflection of the quality of treatment, the amount of practice time required by participants, and possibly other dynamics which have not been well elucidated.

Standard Versus Modified Treatments

In assessing the research literature on the treatment of performance anxiety there are some concerns. One concern is that the research literature is not yet very extensive. There have not been a large number of studies conducted, and there has been little replication of these studies. There has also been insufficient investigation of the conditions under which individual treatments, or combinations of them, are the most effective. Very few of the studies have included long-term follow-up of treatment effects which makes the critical issue of treatment maintenance difficult to assess (Borkovec, Johnson & Block, 1984).

A second concern is that the treatments that have been studied are ones which have been derived from within the clinical anxiety context. In Chapter 3, it was emphasized that such treatments may not be the most
effective for a "non-clinical" area such as music. The aim of the Final Study was to compare a standard clinical treatment for anxiety with a treatment that had been modified to fit the context of music performance more appropriately. The results of the Final Study indicated that neither the standard or modified treatments were superior to each other, and that both had been partly successful. It was suggested in the discussion of results in Chapter 5 that a modified treatment approach may have its efficacy as an additional approach to standard procedures. The field of sports psychology has shown how effective psychological procedures developed specifically for a sporting context can be (Iso-Ahola & Hatfield, 1986).

There appear to be similarities between athletes and musicians which distinguish them from "ordinary" people experiencing clinical anxiety disorders. "Ordinary" people experience clinical anxiety disorders, such as: panic disorder, agoraphobia, social phobia, simple phobia, generalized anxiety disorder, obsessive compulsive disorder and post-traumatic stress disorder (Diagnostic and Statistical Manual of Mental Disorders; 3rd ed., rev., DSM-III-R, American Psychiatric Association, 1987).

One difference between the musician and athlete and an "ordinary" person is the goals for treatment outcome. For the "ordinary" person experiencing an anxiety disorder the aim of treatment is to restore the person's level of functioning back to normal. A person with extreme social anxiety, for example, may simply wish to be able to interact with others at a social function, just like everyone else, without wanting to particularly excel at this activity. The musician and athlete, in contrast, aim to excel in their activity, to varying degrees. For the professional musician or athlete, the aim to excel can be very high and, as a consequence, may lead the musician or athlete to modify their whole lifestyle to achieve this aim. The interview
results (Chapter 3) indicated that one of the performance goals of the professional musician is to achieve a "loss of self". In the Final Study, any attempt to train the anxious performers to achieve a "loss of self" was omitted as the researcher did not know what suitable training for this aim could be, and if he did, how it would be possible to achieve this aim in four sessions! In conclusion, there seem to be some important differences in terms of treatment outcome goals for musical performance anxiety when compared with the other anxiety disorders.

A second difference between the "ordinary" person and a musician or athlete is the lifestyle difference. The person experiencing a severe anxiety disorder can find that the effects of the disorder are very pervasive, and that the disorder affects their normal ability to function in many areas of their life, e.g., agoraphobia. However, such a person does not purposefully choose to have their lifestyle so dominated by their anxiety disorder – they would prefer that it did not! This is in contrast to the musician or athlete who may in fact want their lifestyle to be tailored to meet their musical or sporting aims. This does not mean that the musician would want their musical performance anxiety to dominate their life. However, the musician may be prepared to make considerable adaptations to their lifestyle in order to accommodate their music.

In the cognitive-behavioural treatment of anxiety disorders such as simple phobias, panic attacks and agoraphobia, there is traditionally an attempt on the part of the therapist to isolate the problem behaviours and treat them in isolation. As the results from Chapter 3 showed, professional performers in managing performance anxiety do not apply anxiety management strategies in isolation. The importance to performers of lifestyle factors and the integration of management strategies into an overall lifestyle pattern was
evident. Lifestyle factors included diet, health, sleep, exercise and moderation of drug intake levels. Performers also devised pre-performance plans or routines which they tried to adhere to wherever possible. Also, in applying anxiety management strategies performers did so in a variety of ways and not necessarily in a standard (clinical) way.

Therefore, a more holistic approach to treatment which takes an overview of the musician's lifestyle may be required. A longer term view may also be required to make all the appropriate adaptations in lifestyle. It could well be that these aspects are less important for the amateur performer than for the professional performer. However, the sense of dedication that playing music at any level requires suggests that these aspects are still pertinent to serious amateur performers such as those involved in this research project. The sports psychology literature indicates that this holistic approach is widely practised in sport. This may be due to the broad orientation in sports psychology practice on performance enhancement which usually includes being able to manage "competitive anxiety". In this approach competitive anxiety is not normally singled out to be dealt with separately, but as part and parcel of a whole mental skills training approach. Orlick (1986), in a guide for mental skills training for the serious athlete, suggests that to be effective such training may take several years. It is not being suggested here that the serious performer who presents with performance anxiety need take several years to effectively overcome their performance anxiety. Rather, what is being emphasized is that the treating therapist and client may best approach treatment by looking at the "big picture" as well as the "small picture" and not just implementing the individual treatment strategies in isolation.
In summary, the present researcher believes that there are qualitative differences between a musician with performance anxiety and an "ordinary" person with one of the other DSM-III-R anxiety disorders and that these differences have ramifications for treatment. There are differences in terms of treatment goals, the components of treatment, the length of treatment and the discrete versus holistic approach to treatment.

**Limitations of the Study**

As this research project progressed it became evident that there were several limitations to its effectiveness. One of the main limitations of the study may have been that the modified treatment was not sufficiently developed and may not have been applied in the most effective way.

1. The previous discussion suggested that a holistic and long-term view of treatment is to be preferred in most effectively treating musicians with performance anxiety. The Modified Treatment in the Final Study did not place an emphasis on lifestyle factors such as diet, exercise, caffeine intake, drug intake and sleep. Some of the components that were suggested from the results of the interview study (Chapter 3) were omitted. Training in positive self-talk was omitted from the Modified Treatment to prevent an overlap with the Standard Treatment which incorporated this aspect. There was no attempt to train performers in achieving a "loss of self", or how to deal with mistakes or negative criticism.

2. In Chapter 2 the issue of what is the most appropriate length of treatment was raised. In previous studies of musical performance anxiety the maximum treatment time applied had been eight hours. In
Preliminary Study 1 it was found that 12 hours' treatment time was ample to cover the requirements of the combined cognitive and behavioural treatment, while also allowing all the subjects the opportunity to perform in front of the group. Before commencing the Final Study it was felt that eight hours was sufficient to cover the requirements of the cognitive and behavioural therapies with the use of taped relaxation sessions in addition to live sessions, and with the omission of live performances in front of the group. The researcher would have preferred to space the sessions over five weeks rather than four but was unable to, due to practical restraints.

After the completion of the Final Study eight hours did seem sufficient to cover all the requirements of the Standard Treatment. However, for the Modified Treatment, eight hours seemed insufficient as there were more concepts and techniques being introduced than in the Standard Treatment. It is suggested therefore that the effectiveness of this Modified Treatment may have been limited by insufficient coverage of the skills being taught.

3. Clark and Agras (1991) in their study using a cognitive-behavioural treatment, suggest that the subjects in their programme were able to learn the skills in the five weeks during which the therapy groups were run. They believe, however, that subjects had insufficient time to practise these skills. Clark and Agras received informal feedback from many subjects suggesting that additional follow-up sessions would also have been useful. It is possible that running the Final Study over four weeks rather than five, or more, may have limited the effectiveness of the study. "Eyeballing" of the data from Preliminary Study 1 (Table 2.2) and from the Final Study (Table 5.2) suggests that the effectiveness of
the Combination treatment and the Standard and Modified treatments was roughly equal on the self-report measures that were in common (STAI & MPASS). This suggests that if the Standard and Modified treatments had been run over six weeks, as in the case of the Combination treatment in Preliminary Study 1, there may have been even greater treatment gains.

There are some general methodological considerations which may have provided limitations to this project.

1. In the Final Study an attention placebo control group was omitted. Borkovec et al. (1984) have argued that a waiting-list control group controls for the effects of history, maturation, repeated testing, instrumentation and statistical regression, and therefore makes a reasonable comparison for treatment groups. As a further improvement on the waiting-list control they suggest the use of a placebo control group which controls for possible treatment improvement due to the contact, support, suggestion, and attention of the therapist. However, as Borkovec et al. admit, there are difficulties in running a placebo control, such as ensuring that treatment expectancy in the control group is equivalent to that of the treatment groups. There is also the ethical concern of not providing a treatment which the researcher believes to be effective. It was principally for this last reason that a placebo control group was not conducted in the Final Study. Sweeney and Horan (1982) used both an attention placebo control group and a waiting-list control group and found no differences in treatment outcome between them. The methodological soundness of the Final Study would have been enhanced by the use of an attention placebo control group.
2. Both the Preliminary Study 1 and the Final Study used the same therapist for each of the different treatments. It is possible that therapist bias could have affected the delivery of the treatments. One way to overcome this bias is to use multiple therapists, and although this method does not eliminate the individual biases of the multiple therapists it does, however, allow greater possibility for any bias to be counterbalanced (Borkovec et al., 1984). Therapist and treatment bias were measured through the use of the expectancy assessments made at the commencement and completion of treatments. These measures generally indicated that there was little bias evident in treatment delivery.

3. Researcher bias in the completion of Preliminary Study 2 would have affected the outcome. It is normal to expect some bias in such a qualitative study of this kind (Burgess, 1984) and, as was discussed in Chapter 3, several measures were taken to ameliorate the degree of bias. An additional measure, which could have been taken to counteract bias, would have been to employ another researcher to code the interview transcripts independently from the present researcher. However, as argued earlier (Chapter 3) this would not have been without its drawbacks. Also, such a procedure does not mean that the second researcher would have been operating without bias either; however, it would have been interesting to compare the results of coding.

4. An increase in sample size for both Preliminary Study 1 and the Final Study may have produced more significant results and reduced the potential for Type II error. However, the researcher experienced real
difficulty in obtaining sufficient subjects who met the criteria for musical performance anxiety and who were available to participate in the test recitals on the scheduled dates. Anecdotal evidence suggests that some subjects who would like to have participated in the study would have done so except they felt too anxious at the prospect of playing in the test recitals. As a result the sample sizes of both studies were lower than desirable.

In this project, there was an attempt to provide follow-up assessments to detect change over time and to assess therapeutic maintenance. Öst and Jansson (1987) have pointed out that few of the studies in the anxiety treatment literature they reviewed had provided follow-up assessments of all three systems. Kazdin and Wilson (1978) have pointed out that the rate of therapeutic improvement following treatment cannot be predicted immediately upon treatment completion, as different treatments take different lengths of time to reach maximum effect. Both Preliminary Study 1 and the Final Study included five to six week follow-up assessments, and in the case of the Final Study, this entailed an assessment of all three systems. However, in the light of earlier discussion it does appear that a follow-up of all three systems three to six months after treatment may be the most preferable.

The issue of treatment maintenance possibly could have been dealt with more adequately in this project. Öst and Jansson (1987) and Borkovec et al. (1984) have suggested various means of increasing treatment maintenance such as the use of "booster" groups, support groups, follow-up telephone calls and other procedures.
Future Directions

It has been argued in earlier discussion that the development of a modified cognitive and behavioural treatment for musical performance anxiety might incorporate a holistic and a longer-term perspective. Future studies might incorporate these approaches. A different treatment approach might be to offer treatment over a longer period of time to allow for practice and incorporation of the skills learnt. One possibility is to offer two hour treatment sessions every fortnight for six fortnights. It is also suggested that a three to six month follow-up be conducted to assess treatment maintenance. There might be some experimentation with "booster" groups or follow-up telephone calls made mid-way within the follow-up period.

One way to increase treatment effectiveness as part of a more holistic approach might be to involve music teachers in the treatment programme. Sports psychologists frequently do this in consultation with sports coaches when implementing a mental skills training programme. Such consultation would ensure that the music teacher is not working against the principles being taught by the therapist, and would also provide a regular source of reinforcement of treatment practices.

It may be difficult to organize; however, ideally it would be useful to investigate the effect of scheduling each performer's future performances as part of a behavioural hierarchy. This would also allow an opportunity for behaviour rehearsal to occur in a controlled way.

It would be useful to investigate the comparison of treatments which allow a degree of choice such as, between the use of progressive muscle relaxation and autogenic training, with treatments which allow no such choice.
As part of introducing a more holistic approach other assessment measures may be warranted in addition to those that have been used to date. These could include self-monitoring with personal diaries (Greenwald, 1987), and assessment ratings from important others such as parents or fellow performers. Such assessment procedures may have the dual benefit of increasing compliance and treatment generalization.

An interesting research direction might be to study how different subgroups of anxious musicians respond to treatment – adolescents, amateurs, professionals, soloists, ensemble members, and different types of instrumental players.

**Concluding Comments**

The aim of this research was to develop a more effective treatment for musical performance anxiety than has currently been available. It is believed that this aim has been achieved. The results of the research reinforce the effectiveness of standard cognitive and behavioural methods of treatment. The results also indicate that modifying standard treatment strategies to specifically suit a musical context are also effective. The results of this project suggest that combining standard and modified treatments shows a great deal of promise. As earlier discussion in this chapter has indicated there remain many avenues of investigation which promise further advances in the treatment of musical performance anxiety.

Carol Easton (1991), in her biography of the cellist Jacqueline Du Pré (a cello soloist), gives an indication of how one of the world’s great performers viewed the performance process and anxiety about performance.
Much later in her life, Jacqueline spoke of how she had loved the whole concert process. "Walking on stage – the recognition, the applause, the rumble of interest from the audience when I appeared. It never occurred to me to be nervous. I thought of the audience as a group of friends who had come to hear me play, and I found that very moving. I just played, and enjoyed it. Thinking about the notes would have spoiled the enjoyment. The work was all done beforehand." (p72.)
REFERENCES


APPENDICES

(No appendices for Chapter 1)
Appendix 2.1

Means (standard deviations) for the Self-instructional, Relaxation and Combination groups on RCPS, Age, Years of playing piano, Practice of test piece, Years of performance anxiety, Expect 1, Expect 2 and Difficulty of test piece.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Self-instructional (n = 8)</th>
<th>Relaxation (n = 9)</th>
<th>Combination (n = 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCPS</td>
<td>10.8 (5.1)</td>
<td>11.3 (3.6)</td>
<td>17.3 (4.6)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>18.5 (3.5)</td>
<td>16.2 (4.7)</td>
<td>20.9 (5.3)</td>
</tr>
<tr>
<td>Yrs of playing piano</td>
<td>10.8 (4.5)</td>
<td>10.1 (4.9)</td>
<td>12.5 (5.8)</td>
</tr>
<tr>
<td>Practice of test piece</td>
<td>517 (236)</td>
<td>414 (445)</td>
<td>286 (301)</td>
</tr>
<tr>
<td>Yrs of performance anxiety</td>
<td>7.3 (4.0)</td>
<td>4.3 (2.7)</td>
<td>5.5 (3.3)</td>
</tr>
<tr>
<td>Expect 1</td>
<td>7.4 (0.7)</td>
<td>7.4 (1.2)</td>
<td>8.1 (1.4)</td>
</tr>
<tr>
<td>Expect 2</td>
<td>8.8 (0.7)</td>
<td>8.0 (1.0)</td>
<td>9.4 (0.8)</td>
</tr>
<tr>
<td>Difficulty of test piece</td>
<td>8.0 (0.8)</td>
<td>8.1 (1.2)</td>
<td>7.4 (1.3)</td>
</tr>
</tbody>
</table>

*Note:*
RCPS = Rating on Report of Confidence as a Performer Scale;  
Expect 1 = Rating of treatment expectancy at the first treatment session;  
Expect 2 = Rating of treatment expectancy at the final treatment session.
Appendix 2.2

Analysis of variance for the Self-instructional, Relaxation and Combination groups of scores on RCPS, Age, Practice time, Years of performance anxiety, Expect 1, Expect 2, and Difficulty of test piece, Years of playing piano.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>22</td>
<td>25.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>125.6</td>
<td>5.00</td>
<td>.016</td>
</tr>
<tr>
<td>Practice of test piece</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>22</td>
<td>118106.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>107471.5</td>
<td>.91</td>
<td>.417</td>
</tr>
<tr>
<td>Years of performance anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>22</td>
<td>11.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>18.1</td>
<td>1.62</td>
<td>.220</td>
</tr>
<tr>
<td>Expect 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>22</td>
<td>1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>1.4</td>
<td>1.06</td>
<td>.364</td>
</tr>
<tr>
<td>Expect 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>22</td>
<td>.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>4.6</td>
<td>5.97</td>
<td>.009</td>
</tr>
<tr>
<td>Difficulty of test piece</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>22</td>
<td>1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>1.0</td>
<td>.74</td>
<td>.488</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>22</td>
<td>21.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>45.8</td>
<td>2.18</td>
<td>.136</td>
</tr>
<tr>
<td>Years of playing piano</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>22</td>
<td>26.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>12.7</td>
<td>.49</td>
<td>.620</td>
</tr>
</tbody>
</table>

Note:
RCPS = Rating on Report of Confidence as a Performer Scale;
Expect 1 = Rating of treatment expectancy at the first treatment session;
Expect 2 = Rating of treatment expectancy at the final treatment session.
### Appendix 2.3

Pairwise contrasts for the Self-instructional (SI), Relaxation (R) and Combination (COMB) groups on the RCPS and Expect 2 variables.

<table>
<thead>
<tr>
<th>Contrast</th>
<th>Variable</th>
<th>$t$ ($df = 22$)</th>
<th>($p$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI vs R</td>
<td>RCPS</td>
<td>-0.22</td>
<td>.830</td>
</tr>
<tr>
<td>SI vs COMB</td>
<td>RCPS</td>
<td>2.59</td>
<td>.017</td>
</tr>
<tr>
<td>R vs COMB</td>
<td>RCPS</td>
<td>2.89</td>
<td>.009</td>
</tr>
<tr>
<td>SI vs R</td>
<td>Expect 2</td>
<td>-1.96</td>
<td>.063</td>
</tr>
<tr>
<td>SI vs COMB</td>
<td>Expect 2</td>
<td>1.43</td>
<td>.167</td>
</tr>
<tr>
<td>R vs COMB</td>
<td>Expect 2</td>
<td>3.43</td>
<td>.002</td>
</tr>
</tbody>
</table>

**Note:**

RCPS = Rating on Report of Confidence as a Performer Scale;
Expect 2 = Rating of treatment expectancy at the final treatment session.
### Appendix 2.4

Analysis of variance of pre-test scores for the Self-instructional, Relaxation and Combination groups on the three dependent variables.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>22</td>
<td>106.7</td>
<td>5.81</td>
<td>.009</td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>620.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MPASS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>22</td>
<td>4435.0</td>
<td>1.70</td>
<td>.207</td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>7522.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PQ</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>22</td>
<td>0.9</td>
<td>.29</td>
<td>.750</td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>0.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:*

STAI = State-Trait Anxiety Inventory;  
MPASS = Musical Performance Anxiety Self-statement Scale;  
PQ = Performance Quality.
Appendix 2.5

Pairwise contrasts for the Self-instructional, Relaxation, Combination groups conducted on the STAI pre-test scores.

<table>
<thead>
<tr>
<th>Contrast</th>
<th>Variable</th>
<th>t (df = 22)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI vs R</td>
<td>STAI</td>
<td>-1.30</td>
<td>.207</td>
</tr>
<tr>
<td>SI vs COMB</td>
<td>STAI</td>
<td>2.03</td>
<td>.054</td>
</tr>
<tr>
<td>R vs COMB</td>
<td>STAI</td>
<td>3.39</td>
<td>.003</td>
</tr>
</tbody>
</table>

Note:
STAI = State-Trait Anxiety Inventory.
Appendix 2.6

Multivariate analysis of covariance (repeated measures with averaged tests of significance) for pre-test to follow-up (Time), for the Self-instructional, Relaxation and Combination groups (Group), on all dependent variables (Measure).

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between-subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>21</td>
<td>1608.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>1</td>
<td>436.5</td>
<td>.27</td>
<td>.608</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>576.4</td>
<td>.36</td>
<td>.703</td>
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<tr>
<td><strong>Within-subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>44</td>
<td>1895.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measure</td>
<td>2</td>
<td>64758.4</td>
<td>34.17</td>
<td>.000</td>
</tr>
<tr>
<td>Group x measure</td>
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<td>3242.0</td>
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<td>.165</td>
</tr>
<tr>
<td>Within cells</td>
<td>44</td>
<td>621.9</td>
<td></td>
<td></td>
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<tr>
<td>Time</td>
<td>2</td>
<td>3603.2</td>
<td>5.79</td>
<td>.006</td>
</tr>
<tr>
<td>Group x time</td>
<td>4</td>
<td>539.1</td>
<td>.87</td>
<td>.491</td>
</tr>
<tr>
<td>Within cells</td>
<td>88</td>
<td>655.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measure x time</td>
<td>4</td>
<td>5880.5</td>
<td>8.97</td>
<td>.000</td>
</tr>
<tr>
<td>Group x measure x time</td>
<td>8</td>
<td>1045.9</td>
<td>1.60</td>
<td>.138</td>
</tr>
</tbody>
</table>
Multivariate analysis of covariance (repeated measures with averaged tests of significance) for pre-test to follow-up (Time), for the Self-instructional, Relaxation and Combination groups (Group) on each dependent variable.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>$DF$</th>
<th>$MS$</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between-subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>21</td>
<td>93.0</td>
<td>.52</td>
<td>.477</td>
</tr>
<tr>
<td>Regression</td>
<td>1</td>
<td>48.7</td>
<td>.52</td>
<td>.477</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>233.3</td>
<td>2.51</td>
<td>.105</td>
</tr>
<tr>
<td>Within-subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>44</td>
<td>58.4</td>
<td>8.38</td>
<td>.001</td>
</tr>
<tr>
<td>Time</td>
<td>2</td>
<td>489.2</td>
<td>8.38</td>
<td>.001</td>
</tr>
<tr>
<td>Group x time</td>
<td>4</td>
<td>195.7</td>
<td>3.35</td>
<td>.018</td>
</tr>
</tbody>
</table>

| **MPASS**           |      |       |            |      |
| Between-subjects    |      |       |            |      |
| Within cells        | 21   | 5280.8| .88        | .358 |
| Regression          | 1    | 4654.6| .88        | .358 |
| Group               | 2    | 1772.1| .34        | .719 |
| Within-subjects     |      |       |            |      |
| Within cells        | 44   | 1874.6| 7.93       | .001 |
| Time                | 2    | 14872.8| 7.93     | .001 |
| Group x time        | 4    | 2434.8| 1.30       | .285 |

| **PQ**              |      |       |            |      |
| Between-subjects    |      |       |            |      |
| Within cells        | 21   | 2.4   | .82        | .376 |
| Regression          | 1    | 1.9   | .82        | .376 |
| Group               | 2    | .6    | .25        | .784 |
| Within-subjects     |      |       |            |      |
| Within cells        | 44   | .2    | .2         |      |
| Time                | 2    | 2.1   | 13.05      | .000 |
| Group x time        | 4    | .4    | 2.28       | .076 |

**Note:**
STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self-statement Scale;
PQ = Performance Quality.
To Whom It May Concern:

This is to introduce David Roland, who is a psychologist, currently completing a Ph.D. in Clinical Psychology at the University of Wollongong. His area of research interest is in the management of performance anxiety in musical performers. As part of his Ph.D. he is completing research aimed at developing psychological techniques to enable performers to effectively manage their performance anxiety where this is a problem for them.

For the first stage of the research project David has completed a study at the Wollongong Conservatorium of Music with pianists. This study demonstrated that conventional psychological techniques can be effectively used in managing performance anxiety in musicians. The second stage of David’s research involves interviewing professional musical performers with experience performing at an international level. The aim of this stage is to ascertain how performers at this high level of achievement approach the psychology of performing, and in particular how they deal with performance anxiety. The third and final stage will involve using the information from the interviews to develop new strategies for dealing with performance anxiety. These strategies will then be tested with students from the Canberra School of Music.

You or your organization are being approached with a request for assistance with the second stage of research i.e. interviewing high-level performers. This stage will involve asking each performer a series of questions about their psychological approach to performing, and in particular their approach to managing performance anxiety. It is expected that the interview would last approximately one hour. Information from the interview will remain completely confidential to the researcher. I hope that you and/or your members will be willing to participate in this project which should eventually be of benefit to many people.

Yours sincerely,

Professor W.J. Lovegrove,
Head,
Department of Psychology.
Appendix 3.2

Consent Form

INTRODUCTION AND CONSENT FORM

You have been asked to participate in a study on performance anxiety, or as it is more commonly known, stage fright. The findings of this study will go towards helping other performers in the treatment of performance anxiety. Your participation is voluntary and you can withdraw from the study at any time. Any information you give will be confidential and only known to the researcher. This study is being completed as part of a PhD in Clinical Psychology by the researcher.

The results of this study will contribute towards a PhD thesis to be written up by the researcher. The results may also be published but in a form that will not allow identification of individual performers. The procedures adopted in this study have been examined and passed by the University of Wollongong’s Human Experimentation Ethics Committee.

To fulfil the requirements of the study you will be asked to answer a standard set of questions relating to the psychology of performing and how you prepare for performances. The interview will last approximately one hour and you may decline to answer any individual question if you wish.

Your permission is also sought to make an audiotape recording of the interview for the purpose of helping the researcher in collating information from the interview. The tapes will be erased once this is done. Should you prefer not to have this recording made, it will be dispensed with.

Signature of researcher  _________________________________

Date  _________________________________

This study has been explained to me and I voluntarily give consent to participate in the study. I have had an opportunity to ask questions. I wish the interview to be:

( ) Recorded          ( ) Not recorded

Signature of participant  _________________________________

Date  _________________________________
Appendix 3.3
Interview Guide

PERFORMERS INTERVIEW

EXPLANATION OF THE PURPOSE AND VALUE OF THE RESEARCH BY THE RESEARCHER. READING AND SIGNING OF CONSENT FORM.

A. Biographical Information

Age
Sex
Singer?
Instrumentalist? Which instrument?
Primarily a soloist? Part of ensemble or orchestra?
Other?

B. Lifestyle
(For all questions ask for general levels and coming up to performance)

Q1. Sleep
Q2. Exercise
Q3. Diet
Q4. Caffeine
Q5. Alcohol
Q6. Cigarettes
Q7. Drugs (prescribed or non-prescribed)
Q8. Other substances (e.g., natural remedies)

C. Performing

Q9. Have you always wanted to be a performer (Prompt - age?)?
Q10. As a performer what are the goals you hope to achieve in a performance?
Q11. How do you prepare for a performance? (Prompts - mental; physical and otherwise.)
Q12. Of the strategies you use to prepare for a performance, which do you think are the most effective?

Q13. What is happening while you are performing? (Prompts - mental, physical and otherwise.)

Q14. How do you deal with mistakes when you are performing?

Q15. What happens after the completion of a performance? (Prompts - mental, physical and otherwise.)

Q16. How do you deal with criticism from others about your performances?

Q17. When you compare your best performances with your worst ones, what do you think has made them that way?

Q18. What factors outside of your control can influence your performance?

Q19. Do you feel different during practice, rehearsal and in performance? If so, in what ways?

Q20. What attitude do you have to the audience before, during and after a performance?

Q21. What attitude do you have towards other performers you are performing with?

D. Performance Anxiety

Q22. What do you think performance anxiety is?

Q23. What do you think leads someone to experience performance anxiety?

Q24. Do you experience any of the symptoms of performance anxiety, and if so, what? (Prompts - mental, physical and otherwise.)

Q25. If you experience performance anxiety how do you cope with it? (Prompts - mentally, physically or otherwise.)

Q26. Are there some performing situations that you feel more anxious in compared to others? If so, why?

Q27. How well would you rate yourself as being able to control your performance anxiety, generally?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Control</td>
<td>Complete Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q28. Generally speaking, do you see performance anxiety as being an aspect of your performing that is useful or harmful, or both?

Q29. At what stages of your career has performance anxiety been better or worse? (Prompts - as a student; early professional; experienced professional.)

Q30. Have you received any training or information on how to deal with performance anxiety during your career?
Q 31. Do you think anything should be done about educating or training musical performers in the understanding of performance anxiety? If so, what?

(Additional questions if time is OK)

Q 32. Is memorising music or words important for your performances? If so, how do you go about doing this?

Q 33. What is your attitude to your instrument?

**E. Preparation Strategies**

Do you use any of the following strategies in preparing for a performance?

Q 34. Visualising certain aspects of performing?

Q 35. Mentally rehearsing certain aspects of performing?

Q 36. Thinking particular thoughts to yourself?

Q 37. Practising 'performing' (Prompt - playing as if it is a performance.)

Q 38. Relaxation exercises?

Q 39. Breathing exercises?

Q 40. Physical exercises?

Q 41. Sleep?

**G. The Psychology of Performing**

Q 42. Do you think psychological factors play a part in performing?

Q 43. (If yes) What do you think the psychological aspects of performing are?

Q 44. (If yes) How important are the psychological aspects of performing in achieving a successful performance?

Q 45. As a successful performer what do you think makes you successful in terms of how you approach performing compared to unsuccessful performers?

**H. General Comments**

Q 46. How have you found it answering the questions in this interview?

Q 47. Any general comments you would like to make?
Appendix 3.4

Coding Categories

General Note: Numbers indicate the frequency of responses to each category. Not all the performers responded to each question. For some questions, performers gave responses to more than one category. In these instances, the total number of responses exceeds the total number of performers interviewed.

Sleep (Q 1)

<table>
<thead>
<tr>
<th>Category</th>
<th>Non-anxious: 7.2 hours average sleep a night (range 5 - 10).</th>
<th>Anxious: 7.75 hours average sleep a night (range 6 - 10).</th>
</tr>
</thead>
</table>

Exercise (Q 2)

<table>
<thead>
<tr>
<th>Category</th>
<th>Non-anxious</th>
<th>Anxious</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>No exercise</td>
<td>Moderate exercise</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Before Performance</td>
<td>Increase exercise</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>13</td>
</tr>
</tbody>
</table>

Number of performers responding to this question = 28

<table>
<thead>
<tr>
<th>Category</th>
<th>No exercise</th>
<th>Moderate exercise</th>
<th>Intensive exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Before Performance</td>
<td>Increase exercise</td>
<td>No change</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>

Number of performers responding to this question = 5

Definition of categories: 'No exercise' means no regular exercise programme. 'Moderate exercise' means 3 - 5 x 1/2 hour sessions per week of an aerobic type exercise. 'Intensive exercise' means 6 or more 1/2 hour sessions of exercise per week. 'Not specified' means a clear indication to this answer was not given.
Diet (Q 3)

Non-anxious

General
- No change: 2
- Main meal before: 19
- Main meal after: 5
- Not specified: 2

Number of performers responding to this question = 28

Anxious

General
- No change: 0
- Main meal before: 3
- Main meal after: 2
- Not specified: 0

Number of performers responding to this question = 5

'No change' means no change from normal eating habits. 'Main meal after' means the main meal of the day is taken after the performance. 'Main meal before' means the main meal of the day is taken some time before the performance. 'Not specified' means a clear answer was not given.

Caffeine (Q 4)

Non-anxious

General
- None or very little: 8
- Moderate intake: 8
- High intake: 10

Before Performance
- Increased intake: 3
- No change: 13
- Reduced intake: 4
- Not specified: 6

Number of performers responding to this question = 26

Anxious

General
- None or very little: 2
- Moderate intake: 2
- High intake: 1

Before Performance
- Increased intake: 1
- No change: 3
- Reduced intake: 0
- Not specified: 1

Number of performers responding to this question = 5

Definition of Categories: 'Moderate intake' means 3-5 cups of coffee or tea per day. 'High intake' means more than 5 cups of tea or coffee per day.
Appendix 3.4

Alcohol (Q 5)

### Non-anxious

<table>
<thead>
<tr>
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<th>General</th>
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</tr>
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<tbody>
<tr>
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<td>6</td>
<td>Increased intake</td>
</tr>
<tr>
<td>Moderate intake</td>
<td>18</td>
<td>No change</td>
</tr>
<tr>
<td>High intake</td>
<td>4</td>
<td>Reduced intake</td>
</tr>
<tr>
<td>Not specified</td>
<td>3</td>
<td>Not specified</td>
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Number of performers responding to this question = 28

### Anxious

<table>
<thead>
<tr>
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<th>Before Performance</th>
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<tr>
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<td>0</td>
<td>Increased intake</td>
</tr>
<tr>
<td>Moderate intake</td>
<td>4</td>
<td>No change</td>
</tr>
<tr>
<td>High intake</td>
<td>0</td>
<td>Reduced intake</td>
</tr>
<tr>
<td>Not specified</td>
<td>1</td>
<td>Not specified</td>
</tr>
</tbody>
</table>

Number of performers responding to this question = 4

Definition of categories: 'None' indicates no alcohol consumption. 'Moderate' indicates an average of 1-2 standard drinks a day. 'High' indicates 3 or more standard drinks a day.

Tobacco (Q 6)

### Non-anxious

<table>
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<tr>
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<tbody>
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<td>Moderate intake</td>
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<td>High intake</td>
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<td>Reduced intake</td>
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<tr>
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<td>Not specified</td>
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Number of performers responding to this question = 26

### Anxious

<table>
<thead>
<tr>
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<th>Before Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>4</td>
<td>Increased intake</td>
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<tr>
<td>Moderate intake</td>
<td>0</td>
<td>No change</td>
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<td>High intake</td>
<td>0</td>
<td>Reduced intake</td>
</tr>
<tr>
<td>Not specified</td>
<td>0</td>
<td>Not specified</td>
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Number of performers responding to this question = 4
Number of performers responding to this question = 4

Drugs (Q 7)

Non-anxious

General

<table>
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<th>Beta blockers</th>
</tr>
</thead>
<tbody>
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<td>Before Performance</td>
<td>Increased intake</td>
<td>1 (marijuana)</td>
<td></td>
</tr>
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<td></td>
<td>No change</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reduced intake</td>
<td>0</td>
<td></td>
</tr>
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</table>

Performers who had experimented with Beta blockers sometime in career = 6. *Taken regularly for prescribed medical reasons.

Number of performers responding to this question = 28

Anxious

General

<table>
<thead>
<tr>
<th></th>
<th>None</th>
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<th>Beta blockers</th>
</tr>
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<tr>
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<td>Increased intake</td>
<td>1 (beta blocker)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No change</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reduced intake</td>
<td>0</td>
<td></td>
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</tbody>
</table>

Have experimented with Beta blockers sometime in career = 3

Number of performers responding to this question = 5

Natural Remedies (Q 8)

Non-anxious

General

<table>
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<tr>
<th></th>
<th>No</th>
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| Number of performers responding to this question = 26

Anxious

General

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
</table>
| Number of performers responding to this question = 5

Types of natural remedies mentioned as being generally used included garlic, vitamins B and C, Royal Jelly, kelp tablets, Bach flowers, herbal teas. Types of natural remedies being used before performance included fruit, glucose, sweets, vitamins B, horse radish. Very few
performers commented on whether they used natural remedies immediately prior to performance.

**Always Wanted to Perform**

(Q 9. Have you always wanted to be a performer?)

Age at which performers first began to play music.

Non-anxious: Mean average age = 6.5 years (range = 3 - 15)
Anxious: Mean average age = 9 years (range = 5 - 15)

**Performance Goals**

(Q 10. As a performer what are the goals you hope to achieve in a performance?)

Categories:

1. To engage and inspire the audience.
2. To achieve technical accuracy as closely as possible.
3. Enjoy the thrill of performances.
4. Being true to composer's intentions.
5. Express myself through the music.
7. Do my best.
8. To play with inspiration and spontaneity.
9. To be honest with others involved with the performance, e.g., director, conductor, fellow performers.
10. Improve on previous performances.
11. Experience a personal sense of achievement.
12. Be relaxed and as comfortable as possible.
13. Avoid making mistakes.
14. Make character believable and real (opera singers).
15. Receive public acknowledgement.

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<td>15 (50%)</td>
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<td>3.</td>
<td>13 (43%)</td>
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</tr>
<tr>
<td>5.</td>
<td>11 (37%)</td>
<td>3 (60%)</td>
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<td>6.</td>
<td>9 (30%)</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>7 (23%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>8.</td>
<td>7 (23%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>9.</td>
<td>5 (17%)</td>
<td>-</td>
</tr>
<tr>
<td>10.</td>
<td>4 (13%)</td>
<td>-</td>
</tr>
<tr>
<td>11.</td>
<td>4 (13%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>12.</td>
<td>4 (13%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>13.</td>
<td>3 (10%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>14.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
<tr>
<td>15.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
</tbody>
</table>

Number of non-anxious performers responding to this question = 30
Number of anxious performers responding to this question = 5
Appendix 3.4

Preparation for Performance

(Q 11. How do you prepare for a performance?)

Categories:
A  Musical
B  Physical
C  Psychological
D  Organizational

A. Musical

Sub-Categories:

1. 
   (a) Emphasis on long term practice and being fully prepared well before the performance.
   (b) Tailoring off practice 1-2 days before performance.
   (c) General practice.
   (d) Rely on previous practice and performances.
   (e) Slow tempo practice.
   (f) Increase intensity of practice.
   (g) Light practice.

2. Listening to recordings of the work and conducting personal research.
3. Memorizing the music and/or words.
4. Rehearsal
5. Preparatory performances.
6. Practising 'performing'.
7. Reading over score/words.
8. Excessive practice.

<table>
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<tr>
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<th>Anxious</th>
</tr>
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<tbody>
<tr>
<td>5.</td>
<td>10 (34%)</td>
<td>-</td>
</tr>
<tr>
<td>1e.</td>
<td>6 (21%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>1g.</td>
<td>3 (10%)</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LONG TERM</th>
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<th>Anxious</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a.</td>
<td>15 (52%)</td>
<td>3 (60%)</td>
</tr>
<tr>
<td>-b.</td>
<td>6 (21%)</td>
<td>-</td>
</tr>
<tr>
<td>-c.</td>
<td>3 (10%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>-d.</td>
<td>1 (3%)</td>
<td>-</td>
</tr>
<tr>
<td>-e.</td>
<td>1 (3%)</td>
<td>-</td>
</tr>
<tr>
<td>-f.</td>
<td>-</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>2.</td>
<td>5 (17%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>3.</td>
<td>5 (17%)</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>5 (17%)</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>4 (14%)</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>3 (10%)</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>3 (10%)</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>-</td>
<td>1 (20%)</td>
</tr>
</tbody>
</table>
B. Physical

Sub-Categories:

1. Warm-up on instrument.
2. Naps:
   (a) Taking pre-performance nap.
   (b) Can't or difficult to take nap.
3. Eating patterns:
   (a) Good meal after performance.
   (b) Good meal sometime before performance.
5. Physical activity.
6. Generally resting/taking it easy/building energy.
7. Relaxation.
8. Breathing.
9. Use the voice as little as possible.
10. Good night's sleep/sleep in.
11. Slow down reaction time.
12. Special preparations.
13. Training.

SHORT TERM

<table>
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<th>Anxious</th>
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<td>11 (38%)</td>
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<td>8 (28%)</td>
<td>-</td>
</tr>
<tr>
<td>-b</td>
<td>1 (3%)</td>
<td>-</td>
</tr>
<tr>
<td>3a</td>
<td>7 (24%)</td>
<td>-</td>
</tr>
<tr>
<td>-b</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>7 (24%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>5</td>
<td>6 (21%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>6</td>
<td>6 (21%)</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>5 (17%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>8</td>
<td>5 (17%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>9</td>
<td>4 (14%)</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>3 (10%)</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>1 (3%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>12</td>
<td>1 (3%)</td>
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LONG TERM

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<tr>
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<td>5</td>
<td>1 (3%)</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>1 (3%)</td>
<td>-</td>
</tr>
</tbody>
</table>

C. Psychological

Sub-Categories:

1. Creating right mental focus/task focussed/process focus.
2. Calm and relaxed.
3. Excited attitude/alertness.
4. Mental rehearsal of the music:
   (a) Planned
   (b) Unplanned
5. Self talk
   (a) Positive
   (b) Negative
6. Humour
7. Meditation
8. Treat it as normal day.
12. Developing character/ getting into it.
13. Pretend it is not going to happen.

<table>
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<tr>
<th>SHORT TERM</th>
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<th>Anxious</th>
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<td>18 (62%)</td>
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<td>3.</td>
<td>7 (24%)</td>
<td>-</td>
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<tr>
<td>4a.</td>
<td>5 (17%)</td>
<td>-</td>
</tr>
<tr>
<td>4b.</td>
<td>1 (3%)</td>
<td>-</td>
</tr>
<tr>
<td>5a.</td>
<td>5 (17%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>5b.</td>
<td>-</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>6.</td>
<td>4 (14%)</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>4 (14%)</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>3 (10%)</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
<tr>
<td>10.</td>
<td>1 (3%)</td>
<td>-</td>
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<tr>
<td>12.</td>
<td>-</td>
<td>1 (20%)</td>
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<th>Anxious</th>
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<tbody>
<tr>
<td>11.</td>
<td>3 (10%)</td>
<td>-</td>
</tr>
<tr>
<td>12.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
<tr>
<td>11.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
<tr>
<td>12.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>1 (3%)</td>
<td>-</td>
</tr>
</tbody>
</table>

D. Organizational

Sub-Categories:

1. Time alone.
2. Arriving early.
3. Having a restful day.
4. Organizing arrangements.
5. Carrying out pre-performance routine.
6. Checking over instrument.
7. Being with others.
SHORT TERM  Non-Anxious  Anxious

1. 10  (34%)  -
2. 8  (28%)  -
3. 6  (21%)  -
4. 4  (14%)  -
5. 3  (10%)  -
6. 1  (3%)  -
7. 1  (3%)  -

The number of non-anxious performers responding to this question = 29
The number of anxious performers responding to this question = 5

Most Effective Strategy

(Q 12. Of the strategies you use to prepare for a performance, which do you think are the most effective?)

Categories:
1. Overall Preparation
2. Achieving relaxed state (relaxation, meditation, breathing, resting.)
3. Practice and knowledge of the work.
4. Developing the right mental focus.
5. Pre-performance warm-up.
6. Pre-performance nap.
7. Healthy body and mind.
8. Slow practice on the day.
9. Treating the day of the performance as a normal day.
10. Don't know.

<table>
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<tr>
<td>1. Overall Preparation</td>
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</tr>
<tr>
<td>2. Achieving relaxed state (relaxation, meditation, breathing, resting.)</td>
<td>6  (21%)</td>
<td>-</td>
</tr>
<tr>
<td>3. Practice and knowledge of the work.</td>
<td>4  (15%)</td>
<td>1  (20%)</td>
</tr>
<tr>
<td>4. Developing the right mental focus.</td>
<td>3  (11%)</td>
<td>1  (20%)</td>
</tr>
<tr>
<td>5. Pre-performance warm-up.</td>
<td>2  (7%)</td>
<td>-</td>
</tr>
<tr>
<td>6. Pre-performance nap.</td>
<td>2  (7%)</td>
<td>-</td>
</tr>
<tr>
<td>7. Healthy body and mind.</td>
<td>1  (4%)</td>
<td>-</td>
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<tr>
<td>8. Slow practice on the day.</td>
<td>1  (4%)</td>
<td>-</td>
</tr>
<tr>
<td>9. Treating the day of the performance as a normal day.</td>
<td>1  (4%)</td>
<td>-</td>
</tr>
<tr>
<td>10. Don't know.</td>
<td>1  (4%)</td>
<td>2  (40%)</td>
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</tbody>
</table>

The number of Non-Anxious performers responding to this question = 28
The number of Anxious performers responding to this question = 5

During Performance

(Q 13. What is happening while you are performing?)

Categories:
1. Total concentration on what I'm doing.
2. Enjoyment/ excitement/inspired.
3. Lost in the music/loss of self.
4. Aware of physical arousal.
5. Listening to the sound.
6. Physical tension.
7. Unfocussed thoughts/mind wandering.

Appendix 3.4
Appendix 3.4

Non-Anxious

<p>| | | |</p>
<table>
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<td>(45%)</td>
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<td>12</td>
<td>(41%)</td>
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<td>(41%)</td>
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<td>(7%)</td>
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<tr>
<td>7.</td>
<td>1</td>
<td>(3%)</td>
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</table>

Anxious

<p>| | |</p>
<table>
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<tr>
<th></th>
<th></th>
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</thead>
<tbody>
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<td>-</td>
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<tr>
<td>2.</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>3</td>
</tr>
</tbody>
</table>

The number of Non-Anxious performers responding to this question = 29
The number of Anxious performers responding to this question = 4

Dealing with Mistakes

(Q 14. How do you deal with mistakes when you are performing?)

Categories:

1. Keep going accepting mistake is in the past and focus on the present.
2. Feel let down, angry or guilty.
3. Gets easier with mistakes with experience.
4. You can make mistakes sound intentional.
5. Become especially alert.
6. Mistakes can throw me off.

Non-Anxious

<p>| | | |</p>
<table>
<thead>
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<td>(37%)</td>
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<td>4.</td>
<td>4</td>
<td>(15%)</td>
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<tr>
<td>6.</td>
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<td>(4%)</td>
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Anxious

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</tr>
<tr>
<td>6.</td>
<td>2</td>
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Number of Non-Anxious performers responding to this question = 27
Number of Anxious performers responding to this question = 4

After Completion of the Performance

(Q 15. What happens after the completion of a performance?)

Categories:

1. Require recovery period to "unwind".
2. Feel emotional - either "high" or depressed.
3. Like to socialize with others.
4. Physically exhausted.
5. Drink alcohol.
7. Mentally alert.
8. Like to be alone.
## Dealing with Criticism

(Q 16. How do you deal with criticism from others about your performances?)

### Categories:

1. Try and use criticism constructively.
2. Value feedback from colleagues.
3. Don't like criticism.
4. Don't find criticism from professional critics useful.
5. Listen to criticism from those I respect.
6. Value feedback from family/friends.
7. Value feedback from the audience.

### Best versus Worst Performances

(Q 17. When you compare your best performances with your worst ones, what do you think has made them that way?)

### Categories:

1. Frame of mind.
2. Quality of preparation.
3. Unpredictable.
4. Influence of other performers.
5. Suitability of piece or role.
6. Physical conditions eg. temperature, acoustics, instrument.
7. Physical health.
8. Audience.

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<td>8</td>
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<td>1 (20%)</td>
</tr>
</tbody>
</table>

Number of Non-Anxious performers responding to this question = 28
Number of Anxious performers responding to this question = 5

Outside Factors

(Q 18. What factors outside your control can influence your performance?)

Categories:

1. Fellow performers.
2. Stage set-up.
3. Physical health.
5. Weather e.g., temperature, humidity, dampness.
6. Personal difficulties.
7. Audience.
8. Organizational matters.

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<td>7</td>
<td>7 (25%)</td>
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<td>8</td>
<td>7 (25%)</td>
<td>-</td>
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<tr>
<td>9</td>
<td>5 (18%)</td>
<td>1 (10%)</td>
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</tbody>
</table>

Number of Non-Anxious performers responding to this question = 28
Number of Anxious performers responding to this question = 5

Attitude to the Audience

(Q 20. What attitude do you have to the audience before, during and after a performance?)
Appendix 3.4

Categories:

Before
1. Think positively towards them.
2. Expectant attitude.
3. Think about the size of the audience.
4. Not greatly aware of them.
5. Afraid of them.

During
1. Not greatly aware of them.
2. Feel a relationship with the audience.
3. Self-conscious in front of them.

After
1. Enjoy meeting them.
2. Enjoy their appreciation of the performance.

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<td>5 (18%)</td>
<td>3 (75%)</td>
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<tr>
<td>5.</td>
<td>1 (4%)</td>
<td>-</td>
</tr>
</tbody>
</table>

|                |             |         |
| **During**     |             |         |
| 1.             | 11 (39%)    | -       |
| 2.             | 10 (36%)    | -       |
| 3.             | -           | 1 (25%) |

|                |             |         |
| **After**      |             |         |
| 1.             | 4 (14%)     | -       |
| 2.             | 3 (11%)     | -       |

Number of Non-Anxious performers responding to this question = 28
Number of Anxious performers responding to this question = 4

Attitude to Performers

(Q 21. What attitude do you have towards other performers you are performing with?)

Categories:

1. Important to have trust/respect for them.
2. See them as part of a supportive team.
3. Get along well with them.
4. Other performers can be undermining.
5. Like others to perform well.
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<td>1 (33%)</td>
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<td>3 (11%)</td>
<td>-</td>
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</table>

Number of Non-Anxious performers responding to this question = 28
Number of Anxious performers responding to this question = 3

**Definition Of Performance Anxiety**

(Q 22. What do you think performance anxiety is?)

Categories:

1. Fear of failure.
2. Concern about audience rejection.
3. Don't know.
4. Fear of the unexpected.
5. Concern with improving upon previous performance.
6. Unfocussed/distracted mind.

<table>
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<td>4 (80%)</td>
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<td>-</td>
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<tr>
<td>4.</td>
<td>3 (10%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>5.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
</tbody>
</table>

Number of non-anxious performers responding to this question = 30
Number of anxious performers responding to this question = 5

**Causes of Performance Anxiety**

(Q 23. What do you think leads someone to experience performance anxiety?)

Categories:

1. Lack of preparation.
2. General personal insecurity.
3. Lack of ability.
4. Putting yourself "on the line".
5. Mental focus centred on self and not on the music or character.
6. Feeling pressure of meeting expectations of audience and others.
7. Over-sensitive to criticism.
8. Outside factors.
9. Lack of performing experience
10. Tension.
11. The importance of the occasion.
12. Physiological susceptibility to stress.
13. Don't like performing.
<table>
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<tr>
<th>Non-Anxious</th>
<th>Anxious</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3.</td>
<td>10 (33%)</td>
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<td>4.</td>
<td>6 (20%)</td>
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<td>6.</td>
<td>4 (13%)</td>
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<td>7.</td>
<td>3 (10%)</td>
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<td>8.</td>
<td>3 (10%)</td>
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<td>13.</td>
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</table>

Number of non-anxious performers responding to this question = 30
Number of anxious performers responding to this question = 5

**Symptoms Of Performance Anxiety**

(Q 24. Do you experience any of the symptoms performance anxiety, and if so, what (mental, physical and otherwise?)

Categories:

1. Increased tension.
2. Shakiness.
3. Increased heart rate.
4. Negative thoughts.
5. Sweating.
6. Cold flushes.
7. Nausea.
8. Dry mouth.
10. Quickened breathing.
11. Severe apprehension.
12. Distracted unfocussed thoughts.
13. Isolating behaviour.
14. Memory blank.
15. Going to the toilet.
17. Dullness/lack of inspiration.
18. Reduced co-ordination.
19. Excited anticipation.
20. Hot flushes.

<table>
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<th>Anxious</th>
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<td>2.</td>
<td>7 (23%)</td>
</tr>
<tr>
<td>3.</td>
<td>6 (20%)</td>
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</tbody>
</table>
Coping With Performance Anxiety

(Q 25. If you experience performance anxiety how do you cope with it?)

1. Positive self talk.
2. Breathing exercises
3. Task oriented thinking.
5. Isolating from others.
6. Relaxation exercises.
8. Slowing down actions.
10. Seeking comfort from others.
11. Direct measures for dry mouth e.g., chewing on tongue, sprays.
12. Meditation.
13. Stopping negative thoughts.
14. Tapping into the enjoyment and excitement of the occasion.
15. Warming up exercises on the instrument or voice.
17. Varying playing approach.
18. Distracting the mind.
19. Alcohol.
20. Think about the performance as little as possible.

<table>
<thead>
<tr>
<th>Non-Anxious</th>
<th>Anxious</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>7 (23%)</td>
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<td>5</td>
<td>5 (17%)</td>
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<td>6</td>
<td>5 (17%)</td>
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Number of non-anxious performers responding to this question = 30
Number of anxious performers responding to this question = 5
Most frequent combinations of categoric

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<th>Categories</th>
<th>Freq.</th>
<th>Percentage</th>
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<tr>
<td>1 + 3</td>
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<td>(13%)</td>
</tr>
<tr>
<td>2 + 3</td>
<td>5</td>
<td>(17%)</td>
</tr>
<tr>
<td>1 + 2 + 3</td>
<td>3</td>
<td>(10%)</td>
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</table>

Number of non-anxious performers responding to this question = 30
Number of anxious performers responding to this question = 5

Performance Anxiety Situations

(Q 26 Are there some performing situations that you feel more anxious in compared to others? If so, why?)

Categories:

1. Especially important concert.
2. Concert recital.
3. Concerto.
4. First night.
5. Playing for colleagues/teachers.
6. Recording.
8. Formal vs informal concert (jazz).
10. Accompaniment.
11. Competition.
12. Opera for conductor.
15. Singing with orchestra/performer.
16. Particular performance venues with bad associations.
17. Auditions.
18. Television.
19. Solo/duo.
20. Know people in the audience, e.g., family, friends, students.
21. Last minute concerts.
22. Conducting.
23. Conductor/performers you are not comfortable with.
24. Going on as an understudy.
Non-Anxious  |  Anxious
---|---
1.  5  (17%) | -
2.  4  (14%) | 2  (50%)
3.  3  (10%) | -
4.  2  (7%) | -
5.  - | 1  (25%)

**Note:** All of the rest of the categories (6-24) received only one response.

Number of non-anxious performers responding to this question = 29.
Number of anxious performers responding to this question = 4.

**Control of Performance Anxiety**

(Q 27  How well would you rate yourself as being able to control your performance anxiety, generally?)

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<td>1</td>
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<tr>
<td>Total</td>
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Mode = 8
Range = 4 (6 - 10)
Standard Deviation = 0.9
Mean = 7.9

**Control of Performance Anxiety**

(Q 27  Generally speaking, do you see performance anxiety as being an aspect of your performing that is useful or harmful, or both?)

Categories:
1. Both
2. Useful
3. Harmful

Ways in which it is useful
4. Hyped up/edge
5. Focus
6. Inspiration
7. Improves playing
8. Enhances rapport
9. Increases Sensitivity
Appendix 3.4

Ways in which it is useful

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<td>3.</td>
<td>1 (4%)</td>
<td>1 (25%)</td>
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</table>

Number of non-anxious performers responding to this question = 29
Number of anxious performers responding to this question = 4

Training on Performance Anxiety

(Q 30 Have you received any training or information on how to deal with performance anxiety during your career?)

Categories:
1. No
2. Yes

Received Assistance From
3. Self-exploration
4. Colleagues
5. Non-music professionals
6. Music Teacher

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Received Assistance From

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<td>5.</td>
<td>3 (10%)</td>
<td>2 (50%)</td>
</tr>
<tr>
<td>6.</td>
<td>3 (10%)</td>
<td>1 (25%)</td>
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</tbody>
</table>

Number of non-anxious performers responding to this question = 30
Number of anxious performers responding to this question = 4

Education in Understanding Performance Anxiety

(Q 31. Do you think anything should be done about educating or training musical performers in the understanding of performance anxiety? If so, what?)
Categories:

1. Yes.
2. Yes, for those who need it.
3. No.

What should be provided

4. Work with non-music specialist on relaxation/breathing/posture, etc.
5. Open discussion of the issues.
6. Teach a positive interpretation of anxiety.
7. Should be part of early studies.
8. Performing experience.
9. Provide support from colleagues/teacher.
10. Learn your own way.
11. Giving positive encouragement during training.

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What should be provided

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<tr>
<td>7.</td>
<td>6 (21%)</td>
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</tr>
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<td>1 (20%)</td>
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<td>10.</td>
<td>2 (7%)</td>
<td>1 (20%)</td>
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<tr>
<td>11.</td>
<td>1 (3%)</td>
<td>1 (20%)</td>
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</table>

Number of non-anxious performers responding to this question = 29
Number of anxious performers responding to this question = 5
*N.B. Some performers gave more than one response.

Preparation Strategies

(Q 34-41 Do you use any of the following strategies in preparing for a performance?)

Categories: A. Physical
            B. Musical
            C. Psychological

A. Physical

Sub-categories:

1. Breathing.
   (a) Yes.
   (z) No.
   (a) Take pre-performance nap.
   (z) Don't take nap.
3. Physical activity.
Appendix 3.4

4. Relaxation
(a) Yes.
(z) No.
5. Good night's sleep/sleep in.

<table>
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</tr>
<tr>
<td>1z.</td>
<td>3 (11%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>2a.</td>
<td>16 (57%)</td>
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<tr>
<td>2z.</td>
<td>8 (29%)</td>
<td>4 (80%)</td>
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<td>1 (20%)</td>
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<td>3z.</td>
<td>10 (36%)</td>
<td>3 (60%)</td>
</tr>
<tr>
<td>4z.</td>
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<td>4 (80%)</td>
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<td>6 (21%)</td>
<td>3 (60%)</td>
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</table>

B. Musical

Sub-categories:
1. Practice performing.
   (a) Music
   (z) No
   (b) Movement

<table>
<thead>
<tr>
<th></th>
<th>Non-Anxious</th>
<th>Anxious</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a.</td>
<td>18 (64%)</td>
<td>4 (80%)</td>
</tr>
<tr>
<td>1z.</td>
<td>12 (43%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>1b.</td>
<td>2 (7%)</td>
<td>-</td>
</tr>
</tbody>
</table>

C. Psychological

Sub-categories:
1. Mental rehearsal
   (a) Yes.
   (z) No.
2. Self talk.
   (a) Positive.
   (z) No.
   (b) Negative.
   (a) Performance situation.
   (b) Score/music/words.
   (c) Movements.
   (z) No.
   (d) Scenes/images.
<table>
<thead>
<tr>
<th></th>
<th>Non Anxious</th>
<th></th>
<th>Anxious</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1a.</td>
<td>26</td>
<td>(93%)</td>
<td>2</td>
<td>(40%)</td>
</tr>
<tr>
<td>1z.</td>
<td>2</td>
<td>(7%)</td>
<td>3</td>
<td>(60%)</td>
</tr>
<tr>
<td>2a.</td>
<td>19</td>
<td>(69%)</td>
<td>4</td>
<td>(80%)</td>
</tr>
<tr>
<td>2z.</td>
<td>8</td>
<td>(29%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b.</td>
<td>-</td>
<td></td>
<td>1</td>
<td>(20%)</td>
</tr>
<tr>
<td>3a.</td>
<td>12</td>
<td>(43%)</td>
<td>1</td>
<td>(20%)</td>
</tr>
<tr>
<td>3b.</td>
<td>6</td>
<td>(21%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c.</td>
<td>6</td>
<td>(21%)</td>
<td>2</td>
<td>(40%)</td>
</tr>
<tr>
<td>3z.</td>
<td>6</td>
<td>(21%)</td>
<td>2</td>
<td>(40%)</td>
</tr>
<tr>
<td>3d.</td>
<td>4</td>
<td>(14%)</td>
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<td></td>
</tr>
</tbody>
</table>

The number of non-anxious performers responding to this question = 28
The number of anxious performers responding to this question = 5
Appendix 3.5

Illustrative Case Study (Non-Anxious Performer)

A case example is presented of one of the performers to demonstrate how some of the strategies for managing performance anxiety were implemented. Stephanie (pseudonym) is a younger opera singer. She is someone who experiences performance anxiety but feels she is able to control it and usually use it to her advantage.

Her main symptoms of performance anxiety were heart palpitations and a fear of forgetting her words. She rated herself as an "8" on the performance anxiety rating scale. She prepared musically for performance very thoroughly because she felt much greater confidence before a performance when she did. During her preparation she liked to visually rehearse her part in the performance, "I imagine going through certain movements and how I'll be standing, I imagine how I would look doing that particular thing. Sometimes I even visualize the sounds."

Her goals in performance were to perform as well vocally and dramatically as she could and to have a strong impact on the audience. She liked to develop a feeling of warmth and rapport with the audience, although she admitted this did not always happen.

On the day of the performance she liked to rest, avoiding doing anything tiring and liked to remain as calm as possible. She tried to treat the day as a normal one otherwise. She liked to sleep in on the morning of the performance because she found she could not nap in the afternoon. On the day of the performance she liked to rehearse her part mentally using the score and she liked to have "a bit of a sing". She liked to arrive 1 to 2 hours early for the performance to give herself time to dress and sit around before the performance. She liked to move and think more slowly at this time also, "I would make myself do things very consciously and slowly and that helps a lot". She used breathing as a way of easing anxiety, "... try and get the breath right down low in the body." She did not do any relaxation exercises but she did do stretching exercises as a way of helping herself to loosen up.

She identified several possible causes of performance anxiety in herself, "not feeling particularly well, not liking the piece of music or some members of the cast. Being in a foreign place, performing in another place to the usual venue. Running late... that for me would be the worst thing, running late".

She did not like distractions before going on stage and preferred not to talk to anybody. She engaged in task oriented thinking before the performance: "For the last thing I did ... there were quite a lot of words in that and dialogue, and so, I would go through all that in my mind before I went on. Immediately before I went on stage I would be doing that."

She admitted that performance anxiety could be very harmful but for her it was mostly useful. "I see it as a useful aspect actually because it tends to heighten everything, your senses and so forth. I think if you use it in a positive way it works terribly well, you're much more acute and your movements are ... still sharper somehow. I think if you are too relaxed ... I feel better when I've got a certain amount of tension, I feel I perform better ... and I tend to make more mistakes when I am not nervous which is really bizarre but it's that concentration thing again. Everything is firing when there's a bit of tension I find."
In controlling performance anxiety she emphasized the importance of positive thinking. "... you can't allow negative thoughts to come in, you can't allow it because it's just like having a rope pulled from under your feet, so that no matter how well prepared you are if you let something creep in it can really undermine everything ... you can undermine yourself entirely by thinking that you are not right for the part, you can't sing it, you look rotten in the costume and all those things ... you might look like a bloody dog but if you think you look fabulous, think you look good, think you sound good and you think you know the opera really well, you're fine...it's confidence in you as a performer."
Appendix 3.6

Illustrative Case Study (Anxious Performer)

Edward (pseudonym) had been a successful concert soloist both in Australia and abroad. In recent years he had cancelled concerts because of performance anxiety. He experienced his major symptoms of performance anxiety before the performance rather than during it. Once he made it onto the stage and had started to play he exhibited many of the characteristics of a successful professional performer – i.e., task oriented thinking, appropriate performance goals, feeling inspired, being unperturbed by mistakes, feeling secure in memory and technique and feeling able to communicate to the audience. He said reviews of his performances were mostly very favourable and outside of concert conditions he did not doubt his ability to play well.

He saw the main causes of his performance anxiety as being a continued ambivalence about whether he wanted to be a performer and not having had proper training in how to prepare himself for performance. At the time of the interview he indicated he was feeling a general loss of self-esteem and he wondered whether this contributed to his anxiety. He did not see the audience as a major factor in his nervousness, he felt they were usually friendly towards him.

Before a concert he experienced a heightening of physiological arousal with such symptoms as raised heart rate, cold hands, muscle tension. Psychologically, he experienced confusion, loss of concentration, extreme agitation and a tremendous sense of dread that the performance would end in disaster.

His main strategies for coping with performance anxiety had been to take beta blockers, small sips of alcohol, practising deep breathing and trying to lie down and rest. These had all been variously successful but overall he felt he had no reliable means of managing performance anxiety. He thought the beta-blockers did make him calmer. He tried to have an afternoon nap on the day of the performance if possible - but sometimes he felt too agitated to do this. He rated his ability to control his performance anxiety generally, on the rating scale, as "5", although in recent years he said this control had lessened markedly.

Several features stood out as maintaining his excessive performance anxiety. The ambivalence he experienced about being a performer. His lack of a successful pre-performance routine. An inability to implement strategies for lessening his arousal level before performance such as, relaxation, breathing control, positive self-talk, task oriented thinking and an inability to develop a reliable performance focus. The experience of cancelled concerts had reinforced his belief of himself as a failure and had damaged his professional standing. His perceived low self-esteem helped to undermine his efforts in breaking out of his self-defeating cycle.
(No appendices for Chapter 4)
Appendix 5.1

Means (standard deviations) for the Standard, Modified and Control groups on Age, Years of Playing, Years of Performance Anxiety, Completion of Homework, Expect1, Expect2, Expect3 and RCPS.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard (n = 12)</th>
<th>Modified (n = 10)</th>
<th>Control (n=11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>23.0 (7.1)</td>
<td>26.5 (14.4)</td>
<td>24.5 (9.0)</td>
</tr>
<tr>
<td>Years of Playing</td>
<td>10.8 (6.5)</td>
<td>16.6 (16.1)</td>
<td>9.7 (4.5)</td>
</tr>
<tr>
<td>Years of Performance Anxiety</td>
<td>10.3 (2.0)</td>
<td>10.7 (11.1)</td>
<td>7.9 (4.8)</td>
</tr>
<tr>
<td>Completion of Homework</td>
<td>21.9 (6.2)</td>
<td>21.1 (5.1)</td>
<td>n/a</td>
</tr>
<tr>
<td>Expect1</td>
<td>6.4 (1.5)</td>
<td>6.2 (20)</td>
<td>n/a</td>
</tr>
<tr>
<td>Expect2</td>
<td>16.3 (1.7)</td>
<td>15.6 (4.1)</td>
<td>n/a</td>
</tr>
<tr>
<td>Expect3</td>
<td>16.7 (3.2)</td>
<td>17.6 (3.0)</td>
<td>n/a</td>
</tr>
<tr>
<td>RCPS</td>
<td>10.1 (3.0)</td>
<td>9.9 (3.7)</td>
<td>9.6 (2.2)</td>
</tr>
</tbody>
</table>

*Note:*  
Expect 1: Rating of treatment expectancy at first treatment session;  
Expect 2: Rating of treatment expectancy at the final session;  
Expect 3: Rating of therapist involvement and competency;  
RCPS: Report of Confidence as a Performer Scale.
Appendix 5.2

Analysis of variance for the Standard, Modified and Control groups on Age, Years of Playing, Years of Performance Anxiety, Expect 1, Expect 2, Expect 3, Completion of Homework and RCPS.

<table>
<thead>
<tr>
<th>Source of variation</th>
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<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Within cells</td>
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<td>.26</td>
<td>.766</td>
</tr>
<tr>
<td>Between groups</td>
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<td>28.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Years of Playing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>30</td>
<td>100.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>141.6</td>
<td>1.40</td>
<td>.260</td>
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<tr>
<td><strong>Years of Performance Anxiety</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>30</td>
<td>62.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>24.9</td>
<td>.39</td>
<td>.674</td>
</tr>
<tr>
<td><strong>Expect 1</strong></td>
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<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>20</td>
<td>3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.3</td>
<td>.08</td>
<td>.774</td>
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<td><strong>Expect 2</strong></td>
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<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>19</td>
<td>9.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
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<td>5.6</td>
<td>.58</td>
<td>.456</td>
</tr>
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<td><strong>Expect 3</strong></td>
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<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>19</td>
<td>9.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>1</td>
<td>4.0</td>
<td>.41</td>
<td>.531</td>
</tr>
<tr>
<td><strong>Completion of Homework</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
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<td>32.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>1</td>
<td>3.6</td>
<td>.11</td>
<td>.741</td>
</tr>
<tr>
<td><strong>RCPS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>30</td>
<td>9.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>.6</td>
<td>.06</td>
<td>.93</td>
</tr>
</tbody>
</table>

**Note:**
- Expect 1: Rating of treatment expectancy at first treatment session;
- Expect 2: Rating of treatment expectancy at the final session;
- Expect 3: Rating of therapist involvement and competency;
- RCPS: Report of Confidence as a Performer Scale.
Appendix 5.3

FEEDBACK QUESTIONNAIRE FOR THE PERFORMANCE ANXIETY COURSE

NAME: DATE:

This questionnaire asks you for feedback concerning your performing and the techniques you use to manage performance anxiety since completing the performance anxiety course. Please circle a number for each relevant question.

A. Compared to the level of performance anxiety I experienced before completing the course my level of anxiety, before and during performance, is now:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Much</td>
<td>Slightly</td>
<td>Same</td>
<td>Slightly</td>
<td>Much</td>
</tr>
<tr>
<td>Greater</td>
<td>Greater</td>
<td>Same</td>
<td>Slightly</td>
<td>Less</td>
<td>Less</td>
</tr>
</tbody>
</table>

B. Compared to the quality of my playing before the course, the quality of my playing is now:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Much</td>
<td>Slightly</td>
<td>Same</td>
<td>Slightly</td>
<td>Much</td>
</tr>
<tr>
<td>Worse</td>
<td>Worse</td>
<td>Same</td>
<td>Slightly</td>
<td>Better</td>
<td>Better</td>
</tr>
</tbody>
</table>

C. The following is a list of techniques you may have learnt during the course. Please look at only those techniques and concepts you remember learning, and indicate by circling the appropriate number, how useful you think they have been for you in learning to manage performance anxiety.

<table>
<thead>
<tr>
<th>Not at all useful</th>
<th>Slightly Useful</th>
<th>Very Useful</th>
</tr>
</thead>
</table>

1. Understanding the nature of the fight/flight response and how this relates to the symptoms of performance anxiety
   - 0
   - 1
   - 2

2. Understanding that some anxiety when under control can assist in performing
   - 0
   - 1
   - 2
<table>
<thead>
<tr>
<th></th>
<th>Not at all useful</th>
<th>Slightly Useful</th>
<th>Very Useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Becoming aware of the difference between negative and positive self-talk and learning how to convert negative thoughts into positive ones</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>Developing a list of positive self-talk for use before, during and after a performance</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>Learning how to use task-oriented thinking</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>Practising mental rehearsal (visual and auditory)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>Reminding yourself why you're playing music and &quot;tapping into&quot; your performance goals</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>Practising breathing as a way of centering and relaxing</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>Practising progressive muscle relaxation</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Practising autogenic relaxation</td>
<td>0</td>
<td>1</td>
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</tbody>
</table>

Comments
### Appendix 5.4

Analysis of variance of pre-test scores for the Standard, Modified and Control groups on four dependent variables.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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</tr>
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<td>110.79</td>
<td>.79</td>
<td>.463</td>
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<tr>
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<td>87.61</td>
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</tr>
<tr>
<td><strong>MPASS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>30</td>
<td>3864.76</td>
<td>2.36</td>
<td>.112</td>
</tr>
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<td>Group</td>
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<td>9122.76</td>
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<tr>
<td><strong>SE</strong></td>
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<td></td>
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<td>2.95</td>
<td>.068</td>
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<td>Group</td>
<td>2</td>
<td>926.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PQ</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>30</td>
<td>364.95</td>
<td>1.19</td>
<td>.319</td>
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<tr>
<td>Group</td>
<td>2</td>
<td>433.63</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self-statement Scale;
SE = Self-efficacy Scale;
PQ = Performance Quality.
### Analysis of covariance of pre-test scores for the Standard, Modified and Control groups on HRb, HRd and HRa.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HRb</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>27</td>
<td>100.4</td>
<td>.62</td>
<td>.548</td>
</tr>
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<td>Group</td>
<td>2</td>
<td>61.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HRd</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
<td>27</td>
<td>278.2</td>
<td>.60</td>
<td>.554</td>
</tr>
<tr>
<td>Group</td>
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<td>167.8</td>
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<td></td>
</tr>
<tr>
<td><strong>HRa</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
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<td>186.0</td>
<td>1.47</td>
<td>.247</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>274.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
HRb = Heart rate one minute before performance;
HRd = Heart rate for the first minute during performance;
HRa = Heart rate for the first minute after performance.
Appendix 5.6

Multivariate analysis of variance (repeated measures with averaged tests of significance) for pre-test to post-test (Time), for the Standard, Modified and Control groups (Group) and four dependent variables (Measure).

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
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<tbody>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between-Subjects</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within cells</td>
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<td></td>
</tr>
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<td>2.63</td>
<td>.089</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Within-Subjects</td>
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<tr>
<td>Within cells</td>
<td>90</td>
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</tr>
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<td>Measure</td>
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<td>.000</td>
</tr>
<tr>
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<td>.021</td>
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<tr>
<td>Within cells</td>
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<td>447.8</td>
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</tr>
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Appendix 5.7

Multivariate analysis of variance (repeated measures) for pre-test to post-test (Time), for the Standard, Modified and Control groups (Group), on each dependent variable.

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Note:
STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self-statement Scale;
SE = Self-efficacy Scale;
PQ = Performance Quality
Appendix 5.8

Multivariate analysis of variance (repeated measures with averaged tests of significance) for pre-test to follow-up (Time), for the Standard and Modified groups (Group), on each dependent variable.

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**Note:**
STAI = State-Trait Anxiety Inventory;
MPASS = Musical Performance Anxiety Self-statement Scale;
SE = Self-efficacy Scale;
PQ = Performance Quality.
Appendix 5.9

Adjusted heart rate means for the Standard (ST), Modified (MT) and Control (WLC) groups at pre-test, post-test and follow-up

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Note:
HRb = Heart rate one minute before performance;
HRd = Heart rate for the first minute during performance;
HRa = Heart rate for the first minute after performance.
Appendix 5.10

Multivariate analysis of covariance (repeated measures with averaged tests of significance) for pre-test to post-test (Time), for the Standard, Modified and Control groups (Group) and the three dependent heart rate variables (Phase).

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Appendix 5.11

Multivariate analysis of covariance (repeated measures) for pre-test to post-test (Time), for the Standard, Modified and Control groups (Group), on each dependent heart rate variable.

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Note:
HRb = Heart rate one minute before performance;
HRd = Heart rate for the first minute during performance;
HRa = Heart rate for the first minute after performance.
Appendix 5.12

Multivariate analysis of covariance (repeated measures with averaged tests of significance) for post-test to follow-up (Time), for the Standard, Modified and Control groups (Group) and the three dependent heart rate variables (Phase).

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Multivariate analysis of covariance (repeated measures) for post-test to follow-up (Time), for the Standard, Modified and Control groups (Group), on each dependent heart rate variable.

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*Note:*

HRb = Heart rate one minute before performance;
HRd = Heart rate for the first minute during performance;
HRa = Heart rate for the first minute after performance.
(No appendices for Chapter 6)