The Effect of Listening to Music on Musicians’ Performance Anxiety

THESIS

Presented in Partial Fulfillment of the Requirements for the Degree Master of Music in the Graduate School of The Ohio State University

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2011

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ABSTRACT

The purpose of this study was to determine if listening to music prior to an end of quarter music performance examination (i.e., jury) would reduce Musical Performance Anxiety in collegiate music majors, and also result in a better performance outcome (i.e. evaluation. The following research questions were addressed: (1) Does listening to music prior to a jury examination affect performance anxiety? (2) Do adjudicators listening to students’ jury performances perceive differences in anxiety between those listening to music prior to the jury performance and those not listening to music? (3) Does listening to music prior to a jury examination affect performance quality? (4) What music do students choose to listen to prior to their jury performance? Participants were randomly assigned to music or non-music condition. Those in the music condition listened to music in the 3-5 minutes prior to their jury performance; those in the non-music condition prepared for their jury performance as they normally would, but did not listen to music prior to their jury. Participants completed Spielberger’s State-Trait Anxiety Inventory (STAID-B) to determine general levels of anxiety, as well as anxiety caused by the jury. Results indicated that participants who listened to music prior to juries had significantly lower State Anxiety than those who did not listen to music.
For Mom and Dad
ACKNOWLEDGMENTS

I am deeply grateful to all of the people who offered support, assistance, guidance, and advice during my time at OSU and during the completion of this thesis. First and foremost I must express my deepest gratitude for my advisor Dr. Daryl Kinney. Without his knowledge and wisdom I would not have been able to complete this project. I am extremely grateful for his patience and endurance through this past year.

I would also like to thank the rest of my thesis committee, Dr. Jon R. Woods and Professor Timothy Leasure. I have learned so much from both of these individuals in my undergraduate and graduate education at Ohio State and I am very humbled and honored that they would serve on my committee.

It would not have been possible to complete this study without the generosity of the participants who volunteered. I’m very grateful for all 33 of these young musicians and fortunate that they chose to take the time to help me with this study.

Another individual that I must acknowledge is my friend, colleague, and mentor Jon Waters. Jon has helped me throughout both degrees at OSU but especially the last two years when we’ve worked so closely together. I am very fortunate to have someone willing to spend so much time as my mentor. Special thanks to you for helping me edit this document!

I want to give a big thank you to my parents Mark and Kathy for supporting me the last 25 years! These past 7 years of college at Ohio State have been a great experience
for me and I am so grateful and happy that they were able to be with me every step of the way.

Last but not least I want to thank God. “I can do all things through Christ who strengthens me” Phillipians 4:13. This verse is what helped me get through writing this thesis because it is truly one of the hardest things I have ever accomplished in my life. So thank you God for all the blessings in my life and for giving me the strength to complete this thesis!
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CHAPTER 1
INTRODUCTION

Background of the Problem

Every musician, student or music educator has either experienced nervousness about a performance, calmed and encouraged a fellow musician, or even watched stage fright turn a potentially great performance into something much less. Performance anxiety affects all types of musicians and does not discriminate against race, gender, age, or instrument. This anxiety and general apprehension musicians experience is commonly referred to as Musical Performance Anxiety (MPA) (Kenny, 2006).

Although most view MPA as negative, Hamann (1982) has shown that appropriate levels of anxiety during musical performance can actually be beneficial. Consequently, it would seem that the profession should seek ways to differentiate between normal levels of anxiety, which may enhance musical performance, and abnormal levels of anxiety, which could be considered disabling and debilitating to both the performance and performer. Unfortunately, little research has focused directly on this topic. This is perhaps because of the stigma often associated with performance anxiety in musicians (Petrovich, 2003). However, if researchers begin to examine this phenomenon using scientific methods, students, educators, and musicians might be better able to understand and control the nature and intensity of MPA, and thus have a more positive outlook on musical performance.
Surveys on self-reported health problems of professional musicians conducted for the International Conference of Symphony and Orchestra Musicians have yielded interesting results related to performance anxiety (Fishbein, Middlestadt, Ottati, Straus, & Ellis, 1988). Here, results have revealed that 13% of musicians report a problem with anxiety, with 8% identifying this problem as severe. Moreover, 25% reported a specific problem with stage fright (MPA), with 16% identifying this problem as severe. Importantly, these statistics did not represent musicians who reported simply having anxiety, but only those who had specific problems with performance anxiety. If professional musicians report such experiences with anxiety, one can infer that MPA is perhaps an even greater issue among amateurs and younger musicians.

**Causes of Anxiety**

There are many different causes of anxiety, but by in large, most often stem from the audience. In many performance situations the performer feels threatened by the audience (Maroon, 2002). It is human nature to be apprehensive in front of a group of people. Musicians playing or singing in a practice room, at home, or even singing in the shower are not nervous or anxious, however, the presence of an audience drastically changes the situation. The audience can be anybody or anything. Classmates, parents, friends, strangers, colleagues, music teachers, video cameras, or tape recorders can constitute an audience in the performer’s mind, and thus cause anxiety. One researcher claims that three key factors make up the foundation for causes of anxiety: the individual, the task, and the situation (Hoberg, 2008).
Other causes of apprehension relating to performing in front of an audience are numerous. One might have trepidation in disappointing audience members, including parents, teachers, peers, or even worse, discontent with one’s self. Perfectionism is an illustration of self-disappointment and is closely related to anxiety. Perfectionism can lead to debilitating performance anxiety if performers have very high expectations of themselves and are overly self-critical. Often, this situation results in low self-esteem, which renders performers unable to focus on the bigger picture of a musical performance. Instead these performers habitually concentrate on small, insignificant flaws and mistakes that further distract their performance. Therefore, these musicians perceive the whole performance as a failure (Liston, Frost & Mohr, 2003).

Difficulty of music, memorization and the importance or stature of a specific performance could all be considered potential contributors to MPA (Ryan & Andrews, 2009). Further, these factors can have a substantial influence on musicians’ mental health and mood. For instance, Abel and Larkin (1990) found that college music majors anticipating jury performances demonstrated significant physiological arousal and self-reported anxiety. Such findings confirm the physical and emotional impact of MPA, and demonstrate its prevalence among collegiate musicians.

Overall, many factors contribute to performance anxiety. These factors have a diverse manner of affect on people, depending on the individual. Treating performance anxiety can be difficult because what may work for one musician might not work for another.
Categorizing Anxiety

According to Spielberger (1983), anxiety can be categorized dichotomously as State Anxiety and Trait Anxiety. State Anxiety (S-Anxiety) is defined as situational anxiety, and reflects an individual’s level of anxiety at a given moment in time. State Anxiety is usually associated with feelings of tension, nervousness, or worry. Trait Anxiety (T-Anxiety) refers to an individual’s normal level of anxiousness or how anxious, in general, a person is. Trait Anxiety is considered to be relatively stable for individuals over time. In 1966, Spielberger created a test known as the State-Trait Anxiety Inventory (STAI) that was designed to assess both State and Trait Anxiety. The STAI has been used extensively in research and clinical practice since its inception in 1966, and has consistently been shown a reliable and valid measure of these constructs. Further, studies have demonstrated that State and Trait Anxiety are highly correlated (Spielberger, 1983).

Need for the Study

Collegiate music majors, regardless of their cognate area, are required to perform on a regular basis throughout their careers. Whether it is in front of the studio, department, peers, end-of-the-quarter juries, recitals, or even solos in select ensembles, the pressure on collegiate musicians in regard to performance is tremendous. Little research has investigated ways to reduce performance anxiety in musicians. Although some strategies, such as virtual reality, beta-blockers, or Alexander technique have been examined (Bartel & Thompson, 1994; Kirchner, 2004; Orman, 2003), no studies have investigated the effect of listening to music prior to a performance on MPA. Given that
research in other areas has shown positive effects of listening to music prior to a performance of some type (Smith, 2008), it would seem prudent to determine whether musicians experience these same benefits. As a result of this line of research, musicians might have another mechanism to help mitigate levels of nervousness and apprehension prior to and during musical performance.

Purpose

The purpose of this study was to determine if listening to music prior to an end of quarter music performance examination (i.e., a jury) would reduce Musical Performance Anxiety in collegiate music majors, and also result in a better performance outcome (i.e., evaluation). Specific research questions were as follows:

1) Does listening to music prior to a jury examination affect performance anxiety?

2) Do adjudicators listening to students’ jury performances perceive differences in anxiety between those listening to music prior to the jury performance and those not listening to music?

3) Does listening to music prior to a jury examination affect performance quality?

4) What music do students choose to listen to prior to their jury performance?
**Definition of Terms**

**Anxiety:** An abnormal and apprehensive uneasiness often marked by physiological signs (sweaty palms, tension, increased pulse) usually over an impending or anticipated ill (Webster, 2011).

**Performance Anxiety:** Anxiety among musicians typically referring to a configuration of symptoms including excessive physiological arousal, negative cognitions including apprehension and fear of making mistakes, and decrease in performance quality when playing in front of others (Abel & Larkin, 1990).

**Trait Anxiety:** A person’s normal level of anxiety on a consistent basis (Spielberger, 1983). Since Trait Anxiety is a relatively stable state of anxiety, it may be considered a personality characteristic (Maroon, 2002).

**State Anxiety:** The emotional response that fluctuates according to the situation that the person is encountering. The emotional state exists at a given moment in time and at a particular level of intensity (Spielberger, 1983)

**Perfectionism:** a disposition to regard anything short of perfection as unacceptable (Webster, 2011). Perfectionism can lead to debilitating performance anxiety if performers have very high expectations of themselves and are self-critical, resulting in low self-esteem (Hoberg, 2008).
**Self-efficacy:** Efficacy is the power to produce a desired result (Webster, 2011). Self-efficacy would then be the confidence an individual has in oneself to be able to produce the desired result.

**Self-esteem:** a confidence and satisfaction in oneself (Webster, 2011). Self-efficacy and self-esteem are analogous but not necessarily positively correlated depending on the situation.

**Jury:** A musical performance done at the end of a school term by a student in front of a panel of judges (usually the studio teacher, graduate teaching assistants, and other faculty associated with the specific instrument of which is being performed) that determines whether the student is capable of progressing in his or her academics and career as a musician.
CHAPTER 2

REVIEW OF LITERATURE

The following chapter will discuss relevant literature as it pertains to music and performance anxiety. The chapter begins with a basic review of theories in performance anxiety and then addresses its definitions. Next, literature on coping strategies available for musicians is addressed, followed by a discussion of possible contributors of anxiety in musicians. State and Trait Anxiety and their relationship to a major activity, in this case a musical performance will then be addressed. Lastly, research on listening to music and how it relates to anxiety is discussed.

Defining Performance Anxiety

In order to treat or aid in the effects of performance anxiety it is necessary to thoroughly understand its definition. Performance anxiety is not found in *Webster’s Dictionary* or the *New Grove Dictionary of Music and Musicians*. Charles Spielberger (1983) advises that anxiety should be referred to as two constructs: State Anxiety and Trait Anxiety. The term, “Anxiety,” is most commonly used to describe State Anxiety where one experiences an unpleasant emotional state based on a particular situation. On the other hand, Trait Anxiety could be considered a characteristic or personality trait based on an individual’s stable and consistent level of anxiety (Maroon, 2002).

Barlow’s Model of Anxiety (2000) is valuable in comprehending the intricacies of
performance anxiety and more specifically, Musical Performance Anxiety. His model proposes three specific drawbacks that account for the arousal of anxiety in individuals: a generalized biological vulnerability; a generalized psychological vulnerability based on early experiences in developing a sense of control over salient events; and a more specific psychological vulnerability whereby anxiety comes to be associated with certain environmental stimuli through learning processes such as respondent or vicarious conditioning.

Because there is not a strict definition for performance anxiety one could infer it as a general term for a group of disorders that affect individuals in a range of endeavors, from test taking, public speaking, sports, to the performing arts (Kenny, 2006). Kenny refers to Musical Performance Anxiety as MPA stating, “to achieve prominence requires the attainment of near perfection demanding years of training, solitary practice, and constant, intense self-evaluation, which can add to MPA” (p. 51).

Performance anxiety can be generally understood as a combination of three separate but interacting systems: physiological arousal, behavioral responses and fearful cognitions. It is suggested that negative cognitions appear to have a more important role in causing performance disruption than physiological or behavioral components of performance anxiety (Craske & Craig, 1984; Lederman, 1999; Steptoe, 2001).

Music performance anxiety, sometimes referred to as stage fright, can cause symptoms such as increased heart rate, sweating, and dry mouth which can make singing or playing an instrument extremely difficult (Goode, 2004). One author in particular distinguishes stage fright from performance anxiety explaining that stage fright is the heightened nervous state during a performance while performance anxiety is the
vulnerable state in anticipation of performance (Salmon, 1990). Salmon also goes on to say that a musician’s performance is often hindered by the anxiety set prior to the performance, as many anxious thoughts surface about things that may or may not disrupt a person’s piece of mind. This anticipatory anxiety produces a chain of physiological, behavioral and cognitive reactions. The concept of listening to music prior to a musical performance adheres to the theory that if an individual listens to music, anxious thoughts before the performance will be diminished or eliminated, therefore reducing MPA concurrently.

Coping Strategies

Several authors have documented different coping strategies to help with performance anxiety. A number of individuals have orchestrated studies to see what coping strategies might be best. One very common strategy to help with anxiety is to practice and be overly prepared (Lee, 2002; O’Conner, 2008; Robertson & Eisensmith, 2010). Performing more frequently, in front of numerous audiences and copious venues is a way for one to be more prepared. Kirchner (2004) explains that performing frequently may not always be possible, but it has been reported that numerous performances can increase a musician’s confidence, thereby decreasing anxiety levels. One purpose of preparing could be to create “shortcuts” as used by Robertson and Eisensmith (2010) in their “Scratch Pad Pop-Up Model” strategy of dealing with anxiety. Creating effective shortcuts requires less work during the actual performance. The authors go on to purport that performance-specific preparation is aimed at reducing uncertainty and solving problems before the actual performance. Rehearsing the occasion that could be
potentially threatening and therefore causing anxiety is another example of over preparing. Dress rehearsals in the same venue as the performance, wearing the same outfit, even imitating the audience are all ways of being prepared (O’Conner, 2008).

Some authors, however, disagree that performance practice and over preparation work for everyone (Nagel, 1990; Taborsky, 2007). Music educators often provide inaccurate advice concerning how their students should cope with Musical Performance Anxiety. Student musicians are often told that they will not feel the stress and anxiety of a performance if they are well prepared on a given piece of music. Despite this common assumption, researchers such as Nagel (1990) agree that increased hours of practice do not guarantee a performance void of stress and anxiety: “The anticipation of a public performance can undermine the confidence of the most talented performer at a time when competence is needed most. Not surprisingly, the physical and psychological symptoms of performance anxiety often prevent the attainment of success” (p. 37).

Two more common approaches to aiding in MPA are to video or audio tape practice sessions and mentally visualize the performance (Kirchner, 2005; Lee, 2002; O’Conner, 2008). Video or audiotape practice sessions, reviewing the tape and critiquing the performance have been argued as a great way to improve anxiety levels come performance time. Performers can watch the tape to see where tension occurs and share the tape with others to avoid feeling threatened by critique.

Many performers may already visualize playing a piece, but visualizing an entire piece or even program from beginning to end could also reduce anxiety (Kirchner, 2004). This visualization could include everything from walking on and off stage, bowing, and audience recognition. O’Conner (2008) also suggests that sitting in a quiet and
undisturbed area and visualizing the exact occasion can reduce stress. O’Conner goes on to suggest that doing this in the actual performance venue may yield even more successful results.

A more intense and technological substitute for visualization is the concept of virtual reality. Orman (2003) explains virtual reality to be “a computer simulation of real or imaginary environments that enable real-time interaction with the environment” (p. 302). Orman performed a virtual reality study on eight saxophone players from Louisiana State University. Participants were studied over the period of several weeks where they were exposed to four different types of virtual environments. The purpose of the study was to make the performer feel more comfortable in a performance situation therefore decreasing anxiety levels during an actual major musical performance. Results of the study showed that virtual environments did elicit a sense of presence and provided a means for desensitization.

Another concept for coping with anxiety is to concentrate on stage presence. On stage you can envision yourself as an actor portraying the music in different characters in order to play more musically. Performing can be exceptionally rewarding when the performer enjoys playing musically and expressively rather than thinking about the audience. Research has shown that performers who were motivated by a desire to impress the audience had more MPA than those who were motivated by a desire to express something (Whitcomb, 2008).

Developed in 1904 by Frederick Matthias Alexander, the Alexander Technique is another method where an individual learns to rid their body of harmful tension and stress in order to encourage relaxation. Kirchner (2004) explains that through changing body
movements, an individual acquires the necessary coordination for a particular activity such as performance with greater ease and efficiency. In a study by Hoberg (2008) 12 anxiety prone students were examined to test the effects of the Alexander Technique on performance anxiety. All twelve students performed and were assessed at the beginning of the study. Six students were then used as a control group, while six were part of the treatment group in which Alexander principals were taught. Eighteen months later the students were assessed a second time. The control group’s post-test was very similar to the first, and anxiety was still a hindrance to musical performance. Not only was performance anxiety markedly reduced in the experimental group, but their self-esteem and self-confidence were increased as well. As a result, it was deduced that young learners could benefit tremendously from learning and applying Alexander Technique principles to the playing of a musical instrument.

Cognitive therapy is another coping strategy tested and recommended from several different authors (Kendrick, Craig, Lawson, & Davidson, 1982; Kenny, 2006; Nagel, Himle, & Papsdorf, 1989). Kenny (2006) clarifies that “cognitive therapy is concerned with changing faulty thinking patterns that give rise to maladaptive behaviors, such as excessive muscle tension, avoidance of the feared situation, or impaired performance” (p. 55). Through cognitive therapy and cognitive restructuring, individuals replace negative and detrimental thoughts with more useful and positive ones. Kendrick, Craig, Lawson, and Davidson (1982) compared the effects of cognitive-behavioral therapy with behavior rehearsal in the treatment of debilitating performance anxiety, and found that both experimental group treatments were more effective in reducing anxiety than the control group. Participants in the experimental groups improved performance quality as well.
Nagel, Himle, and Papsdorf (1989) examined the effects of muscle relaxation, cognitive therapy, and temperature biofeedback training on musical performance anxiety. Compared to the control condition, experimental group participants reported significantly greater reductions in trait anxiety, test anxiety and performance anxiety. Cognitive-behavioral therapy was also found to have positive effects on musical performance by reducing anxiety levels and stress or by increasing personal confidence and improving musicality (Taborsky, 2007).

When it comes to performance anxiety, some individuals may require help in the form of drugs rather than through any of the other techniques previously discussed. In a study by Fishbein, Middlestadt, Ottati, Straus, and Ellis (1988) 2,212 professional musicians were assessed. It was found that 25% of these musicians had tried a beta-blocker at some point in their careers and 96% reported they were successful in deterring Musical Performance Anxiety. Another study with professional orchestra musicians found that beta-blockers were considered to be the most effective coping strategy in dealing with performance anxiety (Bartel & Thompson, 1994). Beta-blockers diminish the effects of adrenaline and other stress hormones therefore hindering how these affect anxiety levels.

Other coping strategies to help manage performance anxiety are memory stations, realistic expectations, avoiding inner dialogue, biofeedback, deep breathing, muscle relaxation and arousal reduction (Kirchner, 2004; Petrovich, 2003; Robertson & Eisensmith, 2010). Anxiety is a very personal issue and oftentimes cannot be cured or reduced with any one particular strategy alone. Individuals, most likely through trial and error, must find the most efficient and helpful coping strategy in order to maximize their
performances and reduce anxiety.

**Potential Contributors**

There is no dispute that performance anxiety is an issue among all ages in the discipline of music performance. Several studies have attempted to reveal and evaluate potential contributors to musical performance anxiety (Hamann, 1982; Hamann & Sobaje, 1983; Maroon, 2002; Sarason, 1984). In early childhood, children often enjoy the limelight and appeal of performing to an audience. However, as years pass, young adults become more introverted, aware of the audience and more fearful of uncomfortable situations. This transition is due to a combination of factors, the most important of which are an individual’s inherent temperament, the increasing cognitive capacity and self-reflective function that develops through childhood and adolescence, the type of parenting and other interpersonal experiences that we have, our perception and interpretation of the world around us, our technical skill and mastery, and specific performance experiences that may have positive or negative outcomes (Kenny, 2006).

Hoberg (2008) has claimed that three key factors make up the foundation for causes of anxiety: the individual, the task and the situation. More specifically whether the individual has positive characteristic traits like confidence and high self-efficacy, the degree of difficulty the task may be and if the individual is prepared for the task, and if the specific situation has an audience. Also accounting for the situation could be the magnitude of the performance and importance for the performer and the audience.

In many performance situations the performer feels threatened by the audience (Maroon, 2002). If one does not feel comfortable performing and does not do it often,
then an audience can most certainly be deemed stressful for that individual. The audience can be anybody or anything. Classmates, parents, friends, strangers, colleagues, music teachers, video cameras, or tape recorders comprise the audience, and most anxiety is generated by it.

Another contributor is perfectionism, which is seen in many musicians. Until musicians are able to accept mistakes, anxiety will always be present. Liston, Frost, and Mohr (2003) conducted studies in perfectionism and list six dimensions that comprise it: self-oriented perfectionism (high personal standards), socially prescribed perfectionism (concern over mistakes), parental expectations, parental criticism, doubts about actions, and organization. The definition given by Frost, Marten, Lahart, and Rosenblate (1990) on perfectionism is as follows: “Excessive concern over making mistakes, high personal standards, perception of high parental expectations and high parental criticism, the doubting of the quality of one’s actions, and a preference for order and organization” (p. 449).

In addition to perfectionism, research has shown several other internal and external issues as potential contributors to anxiety. In a study by Ryan and Andrews (2009) over 200 singers from semiprofessional choirs were assessed on performance anxiety. Participants were asked to indicate factors that influenced their experience of performance anxiety. The results showed that 72% of the performers attributed the difficulty of music as a factor that increases anxiety. Memory was another major factor at 64% and 57% of the singers felt that importance of performance was a major issue. Other factors that troubled the performers were the conductor, physical health, stature of audience, mental health, mood, and size of audience.
Lee (2002) identified nine extreme thought processes that have damaging effects on a performer’s behavior, as cited by Matthew McKay’s *Thought and Feelings*: tunnel vision, polarized thinking, overgeneralization, mind reading, catastrophizing, personalization, fallacy of power and control, blaming, and should statements. An example of tunnel vision would be if a student perceives his or her performance to be the only thing that matters in life. Polarized thinking would be assuming that a performance is either excellent or terrible and no in between exists. Overgeneralization would be if a performer misses a note and considers the entire performance to be a failure based on one mistake. A mind reader is worried about what the audience is thinking and creating ideas of what judgments they are making about the performance. Catastrophizing is much like generalization where the performer makes one small event and turns it into an overblown exaggeration. Personalization is when the performer is unable to separate the person from the task. Fallacy of power and control is when a performer feels responsible for what is going on in that there is either complete control over the situation or the exact opposite. Blaming is where performers find someone or something to blame for his or her own misfortunes. And finally should statements are those that haunt performers prior to each performance where one thinks they *should* have practiced more, they *should* have chosen different music, or even *should* have worn a more comfortable outfit.

One specific contributor to anxiety in the case of this particular study is that of the jury performance. The jury consists of music chosen by the student and his or her studio teacher. The jury lasts approximately ten minutes and is usually performed in front of the studio teacher, graduate teaching assistants, and perhaps other faculty related to the specific instrument. This panel of judges will then decide if the student is capable of
moving on to the next level in their education and as a musician. With regard to the jury, in particular, a study at the University of West Virginia provided evidence that the jury performance did, in fact, increase levels of anxiety in collegiate musicians (Abel & Larkin, 1990). Twenty-two undergraduate music students were assessed in a baseline procedure to establish regular levels of cardiovascular parameters and then assessed once again immediately prior to their jury performance. Across all cardiovascular measures including heart rate, systolic blood pressure, and diastolic blood pressure, values observed during the period prior to the jury were significantly higher than the baseline period. Congruent with expectations, students anticipating jury performances demonstrated significant physiological arousal and self-reported anxiety in comparison to the baseline observation.

**Effects of Music Listening**

Little research has examined the effects of music listening in regard to anxiety. Most of these studies have been with non-musicians in nonmusical environments. For example, a study in Australia by Melissa Smith (2008) provided the effects of a single music relaxation session on State Anxiety levels of adults in a workplace environment. A randomized controlled trial was conducted comparing verbal discussion as the control condition to music relaxation as the treatment condition. Smith also used the STAI (Spielberger, 1983) as a pre and post measurement to record State Anxiety levels. The results of the study showed the music relaxation technique used on the adults in the treatment group significantly reduced anxiety levels compared to those in the control group. Participants also indicated an increase in relaxation and pleasantness, as well as a
decrease in tension. The results of this study support the idea that listening to music decreases anxiety levels.

β-Endorphins have been implicated in a number of physiological and psychological phenomena. It is suggested that β-Endorphins may be mediators for the tingling sensation or thrills which listeners obtain when experiencing music they have an aesthetic connection with. Some music may even buffer stress-induced increases in stress hormones, including β-Endorphins. McKinney, Tims, Kumar, and Kumar (1997) explored the effect of selected classical music on plasma β-Endorphins. Results of the study showed that participants in the treatment group of music imagery experienced a significant pre-post decline in β-Endorphins. The data suggest that music imaging may lower peripheral β-Endorphin levels in healthy subjects.

Together, these two studies support the hypothesis that listening to music reduces State Anxiety levels in adults. It follows then that listening to music prior to a major musical performance such as a jury would decrease levels of anxiety in musicians. By examining this assertion empirically, research could provide useful data about MPA for musicians as well.

**Measuring Anxiety**

According to Chen, Gully, Whiteman, and Kilcullen (2000) State Anxiety consists of task-specific self-efficacy and goals, whereas Trait Anxiety consists of cognitive ability, general self-efficacy, and goal orientation. The leading instrument used in the measurement of these two types of anxiety is the State-Trait Anxiety Inventory (STAI) by Spielberger (1983). Spielberger elaborated on studies by Cattell (1966) to
create the STAI. Over the years different variations of the STAI have been constructed to fit the needs of different groups of people. The instrument used in this study was specific to adults (STAIAD-B). The STAI has been used extensively in research and clinical practice (Alexander, 1972; Andrasik & Holroyd, 1980; Gotlib & Robinson, 1982; Hollon & Kendall, 1980; Maroon, 2002; Sharma & Wangu, 1976; Snyder & Katahn, 1973). It comprises separate self-report scales for measuring State and Trait Anxiety. The S-Anxiety scale (Form Y-1) provides twenty statements that evaluate how individuals feel at that exact moment in time. The T-Anxiety scale (Form Y-2) also consists of twenty statements but assess how anxious an individual feels, in general. When one individual completes both forms, comparisons can be made between normal anxiety levels and anxiety levels given a certain situation, in this case a jury performance.

Overall there is an abundant amount of resources that provide coping strategies for musical performance anxiety however none involve the concept of listening to music. Also, there are several opinions about these coping strategies and if they are short-term or long-term solutions to MPA. Researchers have investigated the effects of music listening on anxiety; however, none has included musicians and Musical Performance Anxiety. In conclusion, the available literature would suggest that listening to music prior to a jury would reduce Musical Performance Anxiety in collegiate musicians. In order to determine if this was the case, a pilot study was conducted to test the viability of this hypothesis.
A pilot study was conducted in the spring of 2010 to determine if listening to music prior to a music performance, in this case a mock audition, would help mitigate anxiety levels in musicians. Twenty-seven randomly selected participants completed the pilot study. Participants were members of a collegiate athletic band, not all of who were music majors, and ranged in age from 18-24. Both males (n = 14) and females (n = 13) participated in the pilot. Participants were randomly assigned into a control group that experienced the audition process like they would normally, and a treatment group that listened to music while preparing for the audition. One week prior to the audition, the group completed a pre-audition survey; where they were asked to self indicate their personal performance anxiety. The students were asked, on a Likert scale of 1-10, 1 being the least amount of anxiety and 10 being the most anxiety, how much anxiety they experienced before performing on their instrument during auditions, solos, and other major performances. At this time, the groups were told they would be sight reading difficult excerpts from a marching band transcription from the Finale of Tchaikovsky’s Symphony No. 4. The treatment group was also instructed to bring an mp3 player to the audition to listen to music immediately prior to the audition. Participants auditioned in a random order and upon completion were given a post-audition survey, where they were asked to rate their anxiety on a scale from 1-10 after the audition. A chi-square analysis for the samples indicated a statistically significant difference between groups, $\chi^2 = 8.27$, df = 1, $p \leq 0.01$. Those listening to music reported significantly lower levels of anxiety than those not listening to music.
Because this initial study showed a significant relationship between music listening and performance anxiety, the present study was conceived as a follow up to investigate these findings further. In the case of the present investigation, the State-Trait Anxiety Inventory, because of its established validity and reliability, was used as the dependent measure of State and Trait Anxiety. A live performance in an end-of-the-quarter jury rather than an audition that held no bearing in the student’s academic or musical careers was used as the performance venue. The following chapter contains a detailed description of the methods employed for this study.
CHAPTER 3
METHODOLOGY

Sample

Participants \((N = 33)\) were male \((n = 19)\) and female \((n = 14)\) music majors attending The Ohio State University. Of the 33 participants, 30 were undergraduates pursuing degrees in Music Education or Music Performance and three were graduate students enrolled in Music Performance. Participants were recruited from various instrumental studios throughout the School of Music. Principal instruments for participants consisted of trumpet \((n = 12)\), French horn \((n = 8)\), trombone \((n = 6)\), clarinet \((n = 6)\), and bassoon \((n = 1)\). All participants were performing end-of-the-quarter performance examinations, commonly referred to as juries, either during autumn or winter quarter of academic year 2010 - 2011. Students were recruited on the basis of their willingness to participate in the study. All participants were required to read and return a consent document before participating in the study.

Instrumentation

Participants completed two inventories from Spielberger’s (1983) State-Trait Anxiety Inventory for Adults, abbreviated STAIAD-B. According to Spielberger (1983), “Trait anxiety (T-Anxiety) refers to relatively stable individual differences in anxiety-proneness, that is, to differences between people in the tendency to perceive stressful
situations as dangerous or threatening and to respond to such situations with elevations in the intensity of their state anxiety (S-Anxiety) reactions” (p. 5). The T-Anxiety scale (Form Y-2) contains twenty statements that respondents indicate best describe themselves. Responders answer according to how they “generally” feel on a day-to-day basis. Participants for the present investigation completed the T-Anxiety scale one to two weeks following their jury performance. Scores on this inventory represented participants’ general level of anxiety. The S-Anxiety scale (Form Y-1) consists of twenty statements that evaluate how a person feels at their current condition. Consistent with Spielberger’s instructions for administering this inventory, participants completed the S-Anxiety scale immediately prior to their jury performances. Both forms may be found in the appendixes.

The State-Trait Anxiety Inventory (STAI) has been used extensively in research and clinical practice since its introduction in 1966 (Alexander, 1972; Andrasik & Holroyd, 1980; Gotlib & Robinson, 1982; Hollon & Kendall, 1980; Maroon, 2002; Sharma & Wangu, 1976; Snyder & Katahn, 1973). The STAI provides operational measures of State and Trait Anxiety, as defined by Spielberger in the STAI Manual (1983), in addition to providing normative data of Trait Anxiety in adult males and females. Individual STAI items were required to meet validity criteria at each stage of the test development process in order to be retained of further evaluation and validation (see STAI Manual for validation processes). Representative findings with the STAI in selected areas of research as well as reliability data for Forms Y-1 and Y-2 and normative data are also included in the STAI Manual. The stability coefficients for the forms were based on two groups of high school students tested in classroom settings. Stability, as
measured by test-retest reliability, was relatively high for the T-Anxiety scale and low for the S-Anxiety scale. The internal consistency for both scales is quite high as measured by alpha coefficients and item-remainder correlations ($\alpha=.92$, state; $\alpha=.90$, trait).

The STAI was used in the present study due to its high reliability and validity in regard to studies measuring performance anxiety. According to Spielberger (1983), “stability, as measured by test-retest coefficients, is relatively high for STAI T-Anxiety scale and low for the S-Anxiety scale, as would be expected for measure assessing changes in anxiety resulting from situational stress” (pg. 32). Overall, the internal consistency for both S-Anxiety (Form Y-1) and T-Anxiety (Form Y-2) scales are high as measured by alpha coefficients and item-remainder correlations. Further, because Spielberger (1983) and others (Chen, Gully, Whiteman, & Kilcullen, 2000) have shown that trait anxiety is highly correlated with state anxiety, participants’ trait anxiety served as a covariate in the study.

**Procedures**

After approval from the Institutional Review Board was obtained, preliminary identification of potential participants began by asking studio teachers in the School of Music to consider allowing their students to volunteer for the study. Studio teachers were contacted via an email, which detailed the nature of the study and requested their assistance with the project. Studio teachers agreeing to have their studios participate in the study identified students who were scheduled for end of the quarter performance evaluations (i.e., juries). These students were then contacted via email and asked to participate in the study. Recruitment emails for studio teachers and students may be
found in the appendixes. Prior to the jury performance, participants were randomly assigned to either the treatment condition (i.e., listening to music) or control (i.e., not listening to music). Students in the treatment condition were instructed to bring music of their choosing and a music performance device (e.g., mp3 player) to their warm up room on the day of their jury.

Juries took place during week 10 or finals week of each respective quarter. Autumn quarter juries were held on November 29-30, 2010; Winter quarter juries took place on March 14-15, 2011. On the day of the juries, participants in the treatment condition (i.e., listening to music) were instructed to listen to music of their choosing in the 3-5 minutes immediately prior to their jury performance. Prior to these few minutes of listening, participants could prepare for the performance as they normally would. Participants in the control group were instructed to prepare for the performance as they normally would, without listening to music. Immediately prior to entering the jury performance, participants in both groups completed the State Anxiety Inventory (STAI Form Y-1).

To gather further information regarding the performance itself, faculty members serving as adjudicators were asked to complete a short questionnaire about each participant. To provide objective evaluations, no faculty member had knowledge of the condition to which the participants were assigned. The questionnaire consisted of three Likert scale items:
1. Before this performance, how were you expecting this student to perform?

Poor    Fair    Good    Excellent    Superior

2. After hearing this performance, how would you say this student performed?

Poor    Fair    Good    Excellent    Superior

3. Based upon your knowledge of this student, how would you rate his/her level of nervousness for this performance?

Less than normal    Normal    More than normal

Finally, following the jury performance, participants in the music condition were asked to write a short narrative, addressing if they personally felt listening to music helped mitigate their anxiety, and to which music (genre or specific composer or artist) they chose to listen.

Following the jury performance, participants were contacted either in person or through email to obtain data for the STAI Form Y-2 (Trait Anxiety). These forms were completed by participants in the first two weeks of the subsequent quarters after their jury quarter. After data from the 33 participants were collected, all data were entered into SPSS for analysis.
CHAPTER 4
RESULTS

The purpose of this study was to determine if listening to music prior to an end of quarter music performance examination (i.e., a jury) would reduce Musical Performance Anxiety in collegiate music majors, and also result in a better performance outcome (i.e., evaluation). The effect of listening to music prior to the jury on performance quality was also examined. Four research questions were considered:

Questions:

1) Does listening to music prior to a jury examination affect performance anxiety?

2) Do adjudicators listening to students’ jury performances perceive differences in anxiety between those listening to music prior to the jury performance and those not listening to music?

3) Does listening to music prior to a jury examination affect performance quality?

4) What music do students choose to listen to prior to their jury performance?

Demographics of the Sample

Participants (N = 33) were male (n = 19) and female (n = 14) music majors attending The Ohio State University. Of the 33 participants, 30 were undergraduates.
pursuing Music Education or Music Performance degrees; three were graduate students enrolled in Music Performance. Participants were recruited from various instrumental studios throughout the School of Music. Principal instruments for participants consisted of trumpet \((n = 12)\), horn \((n = 8)\), trombone \((n = 6)\), clarinet \((n = 6)\) and bassoon \((n = 1)\). All participants were performing end-of-the-quarter performance examinations, commonly referred to as juries, either during autumn or winter quarter of academic year 2010 - 2011. Students were chosen on the basis of their willingness to participate in the study. All participants gave their consent to participate through electronic documentation, in accordance with an approved IRB protocol.

**Presentation of Data**

**Research Question #1:** How does listening to music prior to a jury examination affect performance anxiety?

Participants \((N = 33)\) completed all forms (i.e., Y-1 & Y-2) from Charles Spielberger’s (1983) State-Trait Anxiety Inventory (STAIAD-B). Scores on this inventory could range from 20 as the lowest (i.e., representing the least anxiety) to 80 as the highest (i.e., representing the most anxiety). Table 1 displays Trait and State Anxiety mean scores, standard deviations and ranges for treatment and control group conditions. An Analysis of Covariance using Trait Anxiety as the covariate indicated a significant difference between treatment and control group State Anxiety means (see Table 2). Here, after controlling for the influence of the covariate, treatment group State Anxiety means \((M = 39.11)\) were significantly lower than the control group \((M = 45.43)\). Noteworthy is
that the covariate of Trait Anxiety was significant and positively associated with State Anxiety ($\beta = .57, p = .003$).

Table 1

Means, Standard Deviations and Ranges for STAIAD-B Trait and State Anxiety Scores as Grouped by Condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Rg (lo-hi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music Condition</td>
<td>19</td>
<td>39.11</td>
<td>9.43</td>
<td>21-61</td>
</tr>
<tr>
<td>Non-Music Condition</td>
<td>14</td>
<td>45.43</td>
<td>10.81</td>
<td>33-68</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>41.79</td>
<td>10.37</td>
<td></td>
</tr>
<tr>
<td>Trait Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music Condition</td>
<td>19</td>
<td>40</td>
<td>10.04</td>
<td>28-49</td>
</tr>
<tr>
<td>Non-Music Condition</td>
<td>14</td>
<td>40</td>
<td>7.34</td>
<td>25-59</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>40</td>
<td>8.87</td>
<td></td>
</tr>
</tbody>
</table>

Table 2

Tests of Between-Subject Effects for State Anxiety

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>322.30</td>
<td>4.20</td>
<td>.049</td>
<td>.123</td>
</tr>
<tr>
<td>Covariate (Trait Anxiety)</td>
<td>1</td>
<td>816.17</td>
<td>10.63</td>
<td>.003</td>
<td>.262</td>
</tr>
<tr>
<td>Error</td>
<td>30</td>
<td>76.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>1850.51</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Research Question #2: Do adjudicators listening to students’ jury performances perceive differences in anxiety between those listening to music prior to the jury performance and those not listening to music?

As a further indicator of the nature of participants’ anxiety during the jury performance, music faculty evaluating participants’ performances were asked to report each performer’s level of nervousness. Adjudicators based this rating on their previous, established relationship with the student, and rated each student on a scale of Less Than Normal, Normal, and More Than Normal. Table 3 provides frequency counts of how adjudicators evaluated students’ anxiety level based on the Music and Non-Music condition.

Overall, adjudicators rated four participants as less nervous than normal in the music condition, whereas none in the non-music condition received this rating. Three out of the four individuals who were judged to be more anxious than normal came from the non-music condition. A chi-square analysis examining condition by rating revealed no significant differences in these ratings, however $\chi^2(2, N = 30) = 4.73, p = .094$.

Table 3

<table>
<thead>
<tr>
<th></th>
<th>Less Than Normal</th>
<th>Normal</th>
<th>More Than Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Condition</td>
<td>4</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Non-Music Condition</td>
<td>0</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>
Research Question #3: How does listening to music prior to a jury examination affect performance quality?

In addition to assessment of participants’ levels of nervousness, adjudicators were also asked to assess the quality of all students’ performance on a scale of Poor, Fair, Good, Excellent, and Superior. Evaluators were also asked to report on the same scale each participants’ expected level of performance prior to hearing the jury. It should be noted that those studio faculty evaluating the students’ musical performance in the jury had prior experience with the players whom they were evaluating and were unaware of which students were in each condition. For the purposes of analysis, these ratings were converted as follows: students whose expected performance level was rated higher than their actual performance rating were coded as Worse Than Expected; students whose expected performance level was rated lower than their actual performance rating were coded as Better Than Expected; and students whose expected performance level was rated the same as their actual performance rating were coded as As Expected. Table 4 shows frequency counts for ratings by condition. It is noteworthy that out of the seven performers that played better than anticipated according to their studio teacher, six of those were in the music condition, though a chi-square analysis did not reveal any significant differences among ratings, $\chi^2 (2, N = 30) = 3.43, p = .18.$
Table 4

Frequency Counts of Performance Ratings Based on Condition

<table>
<thead>
<tr>
<th></th>
<th>Worse than expected</th>
<th>As expected</th>
<th>Better than expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Condition</td>
<td>1</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Non-Music Condition</td>
<td>2</td>
<td>10</td>
<td>1</td>
</tr>
</tbody>
</table>

Research Question #4: What do those listening to music choose to listen to prior to their jury examination?

Participants (n=19) in the music condition were asked to report the genre of music they listened to during their pre-performance listening session. Overall, there were eight different genres of music, including Classical (n = 4), Broadway Musicals (n = 4), Country (n = 1), Rock (n = 1), Christian (n = 1), Pop (n = 3), Jazz (n = 2) and Instrumental (n = 3). The instrumental genre included music where a professional musician was playing the jury piece these particular students were about to perform. Other music included selections from the musicals Les Miserable and Wicked, Hey Stephen recorded by Taylor Swift, selections from Led Zeppelin, The Christmas Song by Josh Groban, jazz charts by Thelonious Monk, a performance of the Gliere Horn Concerto performed by Bill VerMuelen, and Barber’s Adagio for Strings.
CHAPTER 5
DISCUSSION

Summary

The purpose of this study was to determine if listening to music prior to an end of quarter music performance examination (i.e., a jury) would reduce Musical Performance Anxiety in collegiate music majors, and also result in a better performance outcome (i.e., evaluation). Participants completed the Spielberger (1983) State-Trait Anxiety Inventory (STAI) documenting their Trait Anxiety (i.e., self-characteristic trait) and their State Anxiety immediately prior to their jury performance. Those music faculty members evaluating the juries reported each student’s levels of nervousness based on their knowledge of the student on one of three levels (Less Than Normal, Normal, or More Than Normal) as a further measure of the student’s anxiety level during the jury performance. Adjudicators also provided rating of how the students were expected to perform and how they actually performed on a Likert scale of Poor, Fair, Good, Excellent, and Superior.

A survey of literature revealed that musical performance anxiety is an issue among many musicians of all ages. Typical coping strategies along with potential contributors to performance anxiety were also established. Research was also presented concerning the effect of listening to music. Most of this research focused on music’s use
in other disciplines. Aside from this study and its pilot study, no research could be located that examined the effects of listening to music as a potential coping strategy for Musical Performance Anxiety.

The present investigation was completed to determine if listening to music could serve as a potential coping strategy for musicians dealing with performance anxiety. Participants (N = 33) for the study were male (n = 19) and female (n = 14) music majors attending The Ohio State University. All participants were performing end-of-the-quarter performance examinations, commonly referred to as juries, either during autumn or winter quarter of academic year 2010 - 2011. Participants completed the State-Trait Anxiety Inventory (Forms Y-1 & Y-2) to establish levels of trait and state anxiety.

A summary of results is presented in response to each research question:

(1) Does listening to music prior to a jury performance reduce performance anxiety (i.e. state anxiety experienced during the performance)?

Listening to music prior to a jury performance had a significant effect on State Anxiety mean scores, F(1,30)=4.20, p=0.049, η²=0.12. Participants (n=19) in the Music Condition had a mean State Anxiety of 39.11 (SD=9.42) and a Trait Anxiety of 40.00 (I=10.04), whereas participants (n = 14) in the Non-Music Condition had a mean State Anxiety of 45.43 (SD=10.81) and a Trait Anxiety of 40.00 (SD=7.34). This significant difference was evidenced when controlling for the effect of Trait Anxiety levels, a factor shown to have predictive effects on State Anxiety.
(2) Do adjudicators listening to students’ jury performances perceive differences in anxiety between those listening to music prior to the jury performance and those not listening to music?

More participants in the Music Condition were rated as appearing less nervous than normal than those in the Non-Music Condition. Specifically, four participants from the Music Condition were rated less nervous than normal, whereas no participant from the Non-Music Condition received this assessment. In fact, three participants from the Non-Music Condition received ratings of more anxious than normal, whereas only one participant from the Music Condition was judged this way. Although these differences were not significant, it suggests that listening to music prior to a performance reduces overt appearances of anxiety.

(3) Does listening to music prior to a jury examination affect performance quality?

According to their respective studio teachers’ ratings, one participant from the music condition performed *Worse Than Expected*, ten participants performed *As Expected*, and six participants’ performances were rated *Better Than Expected*. On the other hand, only one participant in the Non-Music Condition had a performance rating that was *Better Than Expected*. Further, two of the participants performed *Worse Than Expected*, while ten performed *As Expected*. Although these differences were not found
to be statistically significant, the number of students performing *Better Than Expected* from the music listening condition is noteworthy.

(4) What music do students choose to listen to prior to their jury performance?

Overall there were eight different genres of music including Classical, Broadway Musicals, Country, Rock, Christian, Pop, Jazz, and Instrumental. The instrumental genre covers individuals who chose to listen to a professional musician playing the actual jury piece they were about to perform. Other music included selections from the musicals Les Miserable and Wicked, “Hey Stephen” recorded by Taylor Swift, selections from Led Zeppelin, “The Christmas Song” by Josh Groban, jazz charts by Thelonious Monk, Bill VerMueelen performing the Gliere Horn Concerto, and Barber’s “Adagio for Strings.”

**Discussion**

Results of this study suggest that listening to music prior to a major musical performance may reduce anxiety in some musicians. Although listening to music has been used as a coping strategy in other research (Smith, 2008), its effects have never been studied with musicians dealing with Musical Performance Anxiety. Such results are encouraging, and deserve replication. If music can be used as another strategy for mitigating feelings of anxiety in musicians, its effects should be explored to determine their magnitude and sustainability. Generally speaking, the causes of MPA result in a frustrating cycle for the performer. If MPA degrades the performance and the performer perceives a self-fulfilled prophecy in an inadequate performance, negative associations of
performing in front of an audience grow in the musician’s mind. It is an unfortunate cycle, involving audience expectation, MPA and the musician’s performance. In sum, the audience’s high level of expectation fuels the performers MPA, then the MPA adversely affects the musician’s performance, and the poor performance promotes the musician’s fear of the audience. If, as this study shows, MPA can be controlled by music listening prior to performance, perhaps this cycle can be broken to some extent.

As a further indicator of performance anxiety, participants’ teachers were asked to rate how nervous they thought each participant was. Findings from this study suggest that overt anxiousness is also controlled somewhat by listening to music prior to a performance. Although this method of measuring anxiety might not be judged as reliable as the Spielberger State-Trait Anxiety Inventory, it is interesting to note that the results from the adjudicators somewhat paralleled the results obtained by using the Spielberger (1983) STAI. In order to prevent bias, adjudicators were unaware of what condition each student was in. As it turns out, four of the seventeen students in the Music Condition were found to be less anxious than normal. No student in the Non-Music Condition was labeled as less anxious. In similar research (Kirchner, 2005; Lee, 2002; O’Conner, 2008) coping strategies were not validated through statistically significant data but instead based on experience and estimations. Therefore given these results, one can infer that listening to music could aid in reducing anxiety levels that manifest both internally and externally.

Findings from this study also suggest that listening to music prior to a musical performance may actually improve the performance. Based on teacher evaluations, musicians who listened to music prior to the jury performed better than expected. The
effects of this coping strategy are paralleled in other findings (Kendrick, Craig, Lawson, & Davidson, 1982; Kirchner, 2004; Maroon, 2002; Ryan & Andrews, 2009). One could speculate that because six out of seven individuals that performed Better Than Expected on their juries came from the Music Condition, that listening to music helped calm nerves and facilitated the means for producing a superior performance for those students. Perhaps further research could correlate State Anxiety, Trait Anxiety, levels of nervousness, and performance quality for each individual. By using a case study method such as this more specific data could be acquired in regard to the effects of music listening on Musical Performance Anxiety and performance quality.

Finally, it appears that college students choose to listen to a wide variety of musical genres in order to ease their own anxiety levels. It was shown that performance anxiety is a complex issue with various components that are individualized from person to person. However, some researchers (Mckinney, Tims, Kumar & Kumar, 1996) believe classical music to be a significant reducer of stress in healthy individuals. Although this study did not prescribe the music participants listened to prior to their jury, future researchers may wish to manipulate this in order to examine McKinney et al.’s hypothesis.

Although not identified as a research question in this study, it is important to note that Trait Anxiety was significantly correlated with State Anxiety scores. Such findings lend further support to Spielberger’s work in this area, and lend further evidence to the predictive reliability of this instrument. Although the study did not examine the predictive nature of these ratings on performance scores, future researchers may also wish to consider this in an effort to determine if there is an ideal State Anxiety threshold.
or an appropriate increase or decrease from Trait to State Anxiety levels that would allow
the performer to achieve a better performance.

Musicians of all age groups need to understand that there are resources available
to facilitate the process of taming personal performance anxiety (Likar, 2009; Taborsky,
2007). Some may not understand that help is available, or perhaps do not know how to
ask for help. Others however, may avoid asking for help, assuming that they are at fault
and are experiencing a personal inadequacy or shortcoming. As a result of this study
students can implement a very easy coping strategy for their anxiety into their
performance practice. Listening to music is something most young people do on a daily
basis, but used in the right context, this strategy could prove immensely helpful for these
musicians with Musical Performance Anxiety.

Limitations

There were several limitations in this study that would generate a need for further
research on this topic. Only wind instruments were recruited to participate in the study
and only five studios (trumpet, trombone, horn, clarinet, bassoon) chose to take part.
Considering this study was performed only at one university, this limited the population
greatly (N=33). With a larger N there is much more research and variables to consider
and examine.

Further, no other condition was included to serve as a control. The only control
was the Non-Music Condition, which included many different types of preparations.
Other controls to consider would need to parallel the Music Condition group. That is, a
control group could be instructed to meditate or sit in silence for the 3-5 minutes prior to
their performance, while the Music Condition is listening to music. Comparing these conditions would determine if music is unique in its effects on performance anxiety. Such findings against these controls would further validate music listening as a coping strategy. Other types of controls should consist of coping strategies already validated through research such as mental visualization (Kirchner, 2005; Lee, 2002; O’Conner, 2008).

Recommendations for further research

Further research should be conducted in regard to using music listening as a potential coping strategy for musicians dealing with performance anxiety. Assuming a larger population, the following variables could be considered:

1) Gender of the musician – With an even number of genders in each condition, one could examine if listening to music affects one gender more than another. These results could then be compared to other studies that used this variable (Maroon, 2002; Spielberger, 1983).

2) Age of participants – This study employed college students but elementary, middle school, high school, or even professional musicians should be studied using music listening as a coping strategy. Age of these students within each grouping could also be examined (i.e. Middle School – 11 year olds vs. 12 year olds; High School – 14 year olds vs. 18 year olds, etc.).
3) Instrument – With multiple participants from a single studio in each condition one could examine the relationship in the level of nerves between each instrument or instrument family (i.e. flutes vs. trumpets or brass vs. strings).

4) Musicians’ Jury Level – In this study only three musicians were graduate students. Assuming equal number of undergraduates and graduates participated and were evenly distributed between conditions, it would be possible to compare the anxiety levels and see if the experience level of the performer also affects anxiety levels.

5) Comparing listening to music with other coping strategies – It would be very interesting to use two variables (i.e., listening to music and another coping strategy already considered significant by previous research such as beta-blockers, Alexander technique, or cognitive therapy) against a control group to see which coping strategy is most effective.
References


Appendix A: STAI Form Y-1 Sample

SELF-EVALUATION QUESTIONNAIRE
STAI Form Y-1

Please provide the following information:

Name ___________________________ Date __________ S ______

Age _______________ Gender (Circle) M F T ______

DIRECTIONS:
A number of statements which people have used to describe themselves are given below. Read each statement and then blacken the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

1. I feel calm .............................................................. 1 2 3 4
2. I feel secure .................................................................. 1 2 3 4
3. I am tense .................................................................... 1 2 3 4
4. I feel strained .................................................................. 1 2 3 4
5. I feel at ease ................................................................... 1 2 3 4
6. I feel upset ..................................................................... 1 2 3 4
7. I am presently worrying over possible misfortunes .... 1 2 3 4
8. I feel satisfied .................................................................. 1 2 3 4
9. I feel frightened ............................................................. 1 2 3 4
10. I feel comfortable ......................................................... 1 2 3 4
SELF-EVALUATION QUESTIONNAIRE
STAI Form Y-2

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate you generally feel.

21. I feel pleasant ................................................................. 1 2 3 4
22. I feel nervous and restless .................................................. 1 2 3 4
23. I feel satisfied with myself .................................................. 1 2 3 4
24. I wish I could be as happy as others seem to be ................... 1 2 3 4
25. I feel like a failure ............................................................. 1 2 3 4
26. I feel rested ................................................................. 1 2 3 4
27. I am “calm, cool, and collected” ........................................ 1 2 3 4
28. I feel that difficulties are piling up so that I cannot overcome them .................................................. 1 2 3 4
29. I worry too much over something that really doesn’t matter 1 2 3 4
30. I am happy ................................................................. 1 2 3 4
Appendix C: Dear Studio Teacher Letter

Dear Studio Teacher,

My name is Kyle Huston and I am currently working on my Masters Thesis in Music Education with Dr. Kinney. My specific interest for the thesis is in performance anxiety and ways to mitigate this for musicians, especially as they prepare for stressful situations like juries and auditions. Previous research has demonstrated that listening to music immediately prior to a performance is helpful in diminishing feelings of anxiety in professions outside of music. I would like to see if this is true for musicians, as well.

During winter quarter 2010, I will be asking students who are participating in juries to volunteer for my study. I will ask some of these students to use the time immediately prior to their jury performance as they normally would; other students will be asked to reserve the last 3-5 minutes of this time for listening to music of their choice. After the jury has been completed all students who agree to participate will complete a short questionnaire about their anxiety level during the jury. This post-jury questionnaire will not interfere with your juries in any way.

I am requesting your help in two ways:

1) I wish to obtain a list of all the members in your studio with contact information so that I am able to recruit participants. Because the study is voluntary, I will need to begin making contact with students soon;

2) In order to determine the implications of anxiety on students’ actual performance, I would like for you or someone who is present at the jury (e.g., your GTA) to answer two questions about each students’ performance. These questions will be Likert scale responses, and will take a negligible amount of time to complete.

For your information, I am currently working on obtaining approval from OSU’s Institutional Review Board, but would like to start recruiting participants as soon as possible. If you are willing to assist me I can stop by your office anytime next week to pick up a studio roster or you can email it to me or Dr. Kinney directly at huston.76@buckeyemall.osu.edu or kinney.61@osu.edu.

Thank you so much for considering this request. I hope you understand that I do not wish to impose on your jury in any way and I do not foresee risks or discomforts to the subject in any way. Please know that participation is completely voluntary and no penalty or loss of benefits will ensue if you choose not to participate or discontinue participation at any time. Therefore, if you have any questions or suggestions, please feel free to contact Dr. Kinney or me at your earliest convenience. I do believe the benefits of this study will give us valuable insight into performance anxiety, and how it might be lessened in our profession. Your assistance with the study would be greatly appreciated.

For questions about your rights as a participant in this study, or to discuss other study-related concerns or complaints with someone who is not part of the research team, please contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

For questions, concerns, complaints, or if you feel you have been harmed as a result of study participation, also please contact Dr. Daryl Kinney at 614-247-6151.

Sincerely,

Kyle A. Huston
Graduate Assistant Director
The Ohio State University
Marching and Athletic Bands
330-340-0335
Appendix D: Dear Studio Member Letter

Dear Studio Member,

My name is Kyle Huston and I am currently working on my Masters Thesis in Music Education with Dr. Kinney. My specific interest for the thesis is in performance anxiety and ways to mitigate this for musicians, especially as they prepare for stressful situations like juries and auditions. Previous research has demonstrated that listening to music immediately prior to a performance is helpful in diminishing feelings of anxiety in professions outside of music. I would like to see if this is true for musicians, as well.

During winter quarter 2010, I will be asking students who are participating in juries to volunteer for my study. Specifically, I will ask some students, who elect to participate in the study, to use the time immediately prior to the jury performance as they normally would; other students will be asked to reserve the last 3-5 minutes of this time for listening to music of their choice. This can be done in the time walking from the practice room to the jury room, or waiting outside the jury room prior to the performance. Students selected to listen to music will need to provide their own iPod, mp3 player or other form of audio and the music they would like to listen to.

After the jury performance ALL students who volunteer to participate will complete a short questionnaire, which will their general level of anxiety during the jury. This process should take no longer than 10 minutes to complete. All documents will be kept in the strictest confidence so that no comments from adjudicators or personal answers to questions will be seen by anyone other than myself or my advisor Dr. Kinney. There is no foreseen risks or discomforts to any participant based on a trial study done in the Spring of 2010.

With your help I will be able to determine if listening to music prior to a major performance aids in the anxiety of the performance. Thank you so much for considering this request!

*If you are willing to participate please respond to this email with “YES” in the subject line*

Your affirmative response to this email will constitute your consent to participate in this study. Understand that participation in this study is subject to your agreement, participation is completely voluntary, and no negative consequences will result for choosing not to participate. You may also withdraw from the study at any time without penalty or prejudice or without loss of benefits to which you are otherwise entitled.

For questions about your rights as a participant in this study, or to discuss other study-related concerns or complaints with someone who is not part of the research team, please contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

For questions, concerns, complaints, or if you feel you have been harmed as a result of study participation, also please contact Dr. Daryl Kinney at 614-247-6151.

Kyle Huston
Graduate Assistant Director
The Ohio State University
Marching and Athletic Bands
330-340-0035
Appendix E: Adjudicator Questionnaire

Student Performer Name __________________________

Student Jury Level __________________________

Teacher Name __________________________

1) Before this performance, how were you expecting this student to perform? (circle one)

Poor  Fair  Good  Excellent  Superior

2) After hearing this performance, how would you say this student performed? (circle one)

Poor  Fair  Good  Excellent  Superior

3) Based upon your knowledge of this student, how would you rate his/her level of nervousness for this performance?

Less than normal  Normal  More than normal