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# Table of Contents

I. Abstract 1

II. Acknowledgements 2

III. Introduction 3-8

IV. Methodologies
   i. Hatha Yoga 9-13
   ii. Alexander Technique 14-20
   iii. The Feldenkrais Method 21-28
   iv. Electromyography 29-31

V. Results
   i. Personal Reactions 32-41
   ii. Electromyography Results 42-47

VI. Conclusion 48-49

VII. Bibliography 50-60

VIII. Appendix
   i. Performance Reactions
      1. Performer Reactions 62-74
      2. Professor Reactions 75-77
      3. Audience Reactions 78-81
   ii. Performance Introductory Speech 82-83
   iii. Performance Handout 84-85
Abstract: A series of four performances were completed and before taking the stage each time, the performer engaged in one of three physical relaxation techniques. The non-medicinal techniques used for the research were Yoga, Alexander Technique, and the Feldenkrais Method. It was hypothesized that these three methods would improve performance and would reduce symptoms of anxiety as experienced by the performer. It was further hypothesized that the performer would experience improvement in muscle tension, breathing, musical ability, and overall performance. Various forms of data were compiled in this research, including readings with electromyography technology, recordings of public performances, professor feedback, and performer experiences that were written in a journal. During the course of this study, the researcher observed that the physical methods evaluated were effective in overcoming performance anxiety in regards to the playing of wind instruments.
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Introduction:

Imagine standing on the edge of an open stage, hundreds of eyes staring up at you from the darkness. Your palms begin to sweat, your heart starts pounding in your chest, you can’t swallow because of how dry your mouth is, and you are trembling from head to toe. This is how many performers, including myself, feel every time they take the stage. Now you have to look as calm and as confident as can possibly be and entertain this group of eyes watching you. Because of this, performers are constantly looking for treatment options for anxiety and stage fright. Several have been discovered and become popular throughout the years. Everything from drugs and herbs, such as beta-blockers and Xanax, to physical regimens and psychological treatments, like yoga and meditation, have been cited as treatment for performance anxiety. While there are pros and cons to all methods of treatment, I focused exclusively on the use of physical, non-medicinal methods of reducing performance anxiety for musicians.

The non-medicinal techniques I used for my research are Yoga, Alexander Technique, and the Feldenkrais Method. I hypothesized that these three methods would improve performance and reduce symptoms of anxiety as experienced by the performer. I thought I would experience improvements in my muscle tension, breathing, musical ability, and overall performance experience. With all of the combined data from my research including readings with electromyography technology, recordings of public performances, professor feedback, and my own
experiences that I wrote in a journal, I found which physical methods are effective for overcoming performance anxiety in regards to the playing of wind instruments.

I held a series of four performances engaging in one of three physical relaxation techniques I had selected before taking the stage each time. The first performance acted as a control group where none of the techniques selected to overcome performance anxiety were used. Each performance would showcase different musical material allowing for a realistic performing experience and a natural reaction to the techniques. The more times a piece is played in public, the more comfortable it becomes to perform. In order for the comfort level to be equal among the performances, four different works were chosen that exhibited similar levels of difficulty, in length, technique, endurance, etc. The first two musical selections I originally chose for the four performances were from the *Six Metamorphoses after Ovid* by Benjamin Britten, the 2nd movement “Phaeton” and the 4th movement “Bacchus”. I also performed the 3rd movement from Sonata for Solo Oboe by Camille Saint-Saëns, and the 1st movement from Concerto in A Minor by Antonio Vivaldi. Each piece had its own difficulties. Before and after each performance, I wrote detailed thoughts and observations in a journal about my experience. I documented several categories including: my level of anxiety on a scale of 1-10 right before entering the stage (10 being the most detrimental), my anxiety symptoms, how the technique affected me physically, and how the technique affected me mentally. By doing this, I hoped to uncover which non-medicinal methods were more useful to musicians for easing performance anxiety.
There are several reasons why non-medicinal methods and physical relaxation techniques can be favorable to medicinal options, such as beta-blockers or anti-anxiety prescriptions. An article in *The International Musician* by Bryan Sanders stated:

Stage fright, which is often referred to as performance anxiety, is a debilitating condition that can devastate a person’s self-confidence and career. In fact, this topic could easily be extended to attorneys, athletes, CEOs, and more, as this is a problem that is shared cross-occupationally (Sanders).

As Sanders stated, these are symptoms that appear in people of all occupations. Particularly for musicians, they can be daily occurrences. With prescription anxiety medications, there are often the risks of addiction and/or behavior altering symptoms (Robinson). Beta blockers in particular are known for being a risk for symptoms such as hallucinations, asthma, and even heart failure (Sanders). For performing musicians, relying on these medications every single day is a major health hazard. By using methods such as hatha yoga or Alexander Technique, these risks are nonexistent. The other advantage to these non-medicinal options is, besides a few sessions of training or a couple hours of research, you can begin to perform these techniques virtually for free whenever and wherever you want. For a more in-depth understanding of the techniques, which I obtained for this project, regularly scheduled classes are advised to gain a complete comprehension of the material, as they take a lifetime of practice. However, samplings of the exercises can be extremely effective. They are also easily transferable to any environment (JHHA).

I gathered my inspiration for this performance anxiety research from my own artistic life and career goals. I am a musician and have faced my own rigorous
performance trials. This thesis topic is one that is very personal to me. For the past ten years that I have been performing music, not once have I been able to take the stage without performance anxiety. I had constantly worked on improving my reaction to performance anxiety, but it is something I continued to struggle with. The higher expectations and the increased pressure to impress the audience had paralyzed me with fear before a concert. I suffered from fairly drastic episodes of performance anxiety on a regular basis. As an oboist, difficulties in performing arise when plagued with anxiety, particularly in regards to breathing, finger tension, shaking of the extremities, excess saliva production, sweating and chilling, stomach aches, and even migraines.

Difficulties in breathing can lead to severe problems for wind instrumentalists. The breath is what controls our tone, tuning, and sound quality. Professor Martin Schuring says:

> Breathing lets blood back into your embouchure and relaxes the muscles, provides fresh oxygen and relaxes you, and allows for improved endurance and tone (Schuring, 10).

Without good breath support, the performance will sound meek in comparison to playing with a properly supported breath. The pitch of the sound played on the instrument can slide around without control and the tone can sound thin and most likely sharp due to the lack of air. For reed instruments, this may result in biting down on the reed causing the performer to work harder to expel breath. There is likelihood for stamina issues when lacking the appropriate amount of oxygen. By not practicing necessary diaphragmatic breathing, you can cause yourself to have to intake air more frequently than needed, causing lightheadedness. Having trouble gathering proper...
breaths can even cause dangers to bodily health while onstage such as hyperventilating and passing out (Farhi).

Suffering from bad finger tension and issues involving trembling extremities caused by performance anxiety hinders a musician’s performance in obvious ways. For all musicians, whether wind, string, or vocal, trembling affects the breathing and focus of the air. Finger tension not only hinders a live performance experience, but it can also cause lifelong damage to a musician’s body. Musicians are commonly suffering from diseases such as Carpal Tunnel, Muscular Dystrophy, Tennis Elbow and other debilitating disorders. From the extra strain in the muscles of the body, not only on a regular playing basis, but also from the extreme pressures of performance situations, the tension in the hand and fingers can cause serious illness and pain. This may lead to a need for muscle therapy and the taking of even more medications (Greene).

Many performers, mainly vocalists and wind instrumentalists, get the “dry mouth” syndrome when performing live, whether in a dry room or not. This is also a symptom due to performance anxiety. When the adrenaline hits the body and the nervous system begins to respond to that stimulus, one of the affects within the body is a lack of saliva production. This can be taxing when you need the moisture in your mouth in order to complete your performance goal. For an oboist, if we cannot produce enough saliva in our mouth to keep our reed wet while we are playing, it will most likely dry out and we will not be able to get the reed to vibrate during the
performance. Not only do these technical problems arise from the issue, but also this will cause even more anxiety as one fails to succeed in front of the audience.

For musicians who experience the lowest levels of anxiety, this surge of adrenaline actually enhances their performing experience. However, for those who experience anxiety levels at the opposite end of the spectrum, the worst case scenario occurs. They lose control of their minds and their bodies. They completely shut down and are unable to perform (Sanders).

The convenience of these non-medicinal anxiety techniques is extremely important because of the effect that performance anxiety can have on the human body and soul. With this research I hope not only to aid my own troubles with performance but to help everyone else like me who suffers from shaking, “butterflies”, sweating, shortness of breath, lightheadedness, and even occasional migraines. These symptoms are detrimental to those of us planning on continuing professional lives in music, especially for wind instrumentalists. I wanted to bring new research to light so that others suffering from performance anxiety can learn to control their nerves without the use of hazardous prescription medications.
Hatha Yoga:

Otherwise known as the *yoga of postures*, hatha yoga is a physical movement technique that is one of the most well known today worldwide. Hatha yoga is the form commonly referred to when individuals take standard yoga classes. It is simpler than many other forms of yoga such as ashtanga yoga, known also as power yoga, or bikram yoga, which is performed in a very hot room at around 90-100 degrees Fahrenheit. This style is very gentle and covers the most basic of physical yoga poses. It is used to balance the mind and the body together as one to promote strength, flexibility, and the unity of one’s self. The exercises, or *asanas* in Sanskrit, are designed to channel your energy, increase breath control, improve immunity, and can also assist with working your internal muscles helping to prevent certain diseases, such as asthma and diabetes. Yoga commonly uses the language of Sanskrit, a historical Indian language. The term *asana* directly translates to: a pose one can hold with ease. Terms such as *nadis* and *pranayama* are also frequently present in descriptions of poses referring to energy and breath control.

The art of yoga has been a used method of physical centering and a type of meditation for a long time, beginning in the Northern Indian culture several thousand years ago. Yoga is primarily a tool to control the stress response system. “Yoga has a sly, clever way of short-circuiting the mental patterns that cause anxiety,” says Dr. Baxter Bell, renowned yoga instructor (Klickstein, 45). It is a system of breathing exercises and physical poses working to guide your mind and body to act together as a unified whole in order to relieve stress and promote balance. This is extremely
valuable for performance anxiety because of the physical stress relief. If you suffer from rapid breathing, muscular stiffness, or constant shaking in the extremities, practicing yoga can reduce the physical strain on the body and focus the breathing, reducing the risk for hyperventilation.

In preparation for my performances, I studied hatha yoga with my private instructor, Professor Rebecca VerNooy, once a week for twenty weeks throughout the school year. Professor VerNooy is an extremely qualified teacher of yoga, but also of many other physical movement techniques. She teaches Movement for the Actor and Physical Theatre at Ohio University. She has formerly taught at Caymichael Patten Studio, The School for Film and Television, New York Film Academy and Rutgers University (Kabat-Zinn).

During each weekly lesson we explored the art of hatha yoga and expanded my vocabulary of poses. Throughout our classes we often meditated either before or after the lesson and I would have meditation homework requirements for the week. By the end of the twenty week time period I had a thirty-minute routine prepared to precede one of the public performances. This routine consisted of several poses including exercises such as downward dog, savasana, tadasana, cat, cow, triangle and many others. Throughout the poses, I was encouraged to breathe deeply and purge any stress or unwanted tension from the body through loud exhales of breath.

The routine would typically begin in savasana. This pose is done by lying flat on the floor on the back with palms out, facing the ceiling. During this pose, attention is drawn to all of the parts of the body that touch and connect with the floor. Many
areas of the body, such as the arch of the back and behind the knee caps, will not come in contact with the floor, but of the areas that do, some carry more weight than others. From this pose you can do a variety of different stretches. Many involve the lengthening of the lower back, the expansion of the diaphragm, and the focus of energy through the legs and feet.

The second pivotal pose of the hatha yoga routine is *child’s pose*, or *balasana*. This pose is entered from *savasana*. After completing the series of floor exercises, the body rolls onto the right side and onto the hands and knees. From here, the weight of the body is distributed over the knees and rested in the lap crease. Arms extend in front of the body, palms engaged with wide spread fingers into the floor, and shoulders and head are released falling between the arms and to the floor.

From *child’s pose*, the weight of the body is distributed back to the hands and knees. This position is named *table top* because the back is parallel to the floor, such as a table, and evenly weighted over the hands and knees. In *table top* pose, one can freely move the back and pelvis. The poses of cat and cow are then moved through. *Cat* pose is moved into from *table top* when the back arches towards the ceiling and the head and tail of the body curve closer to the floor. *Cow* is the exact opposite with the head and tail of the body stretching towards the ceiling and the middle of the back reaching towards the floor. *Cat* and *cow* are meant to be done in tandem exploring the alternate reaches of the muscles of the back. Once a series of *cat* and *cow* poses has been performed, the weight is again distributed back to *table top* position.
From table top pose, the weight is distributed forward onto the hands as the knees are lengthened in a standing, bent over position. From here, the legs are stretched behind the body with the hands still remaining on the floor creating an upside-down V shape from the hands to the feet. This pose is called downward dog. This pose is designed to stretch the hips away from the torso and to strengthen the hamstrings. As heels of the feet are lengthened into the ground, the hips are pulled back away from the torso and toward the feet creating openness in the shoulder blade and length of the back. After maintaining this pose, the feet are walked inwards toward the hands and balance is brought into the feet with the upper body hovering freely over the hips. Slowly the upper body rises from its position vertebra by vertebra up the spine until coming to an upright position balanced over the feet.

The last key pose to the hatha yoga routine is the triangle pose, or in Sanskrit, *trikonasana*. This pose is one of the more difficult poses in this routine as it requires more balance and coordination than the others. This pose begins by standing evenly balanced over the feet spread a little past shoulder-length apart. The right and left sides are both done separately. First, the right foot is rotated towards the right direction so that the back of the heel lines up with the toes of the left foot. The arms are extended out to the sides, parallel to the floor, and the torso leans to the side over the right foot while keeping the legs straight. The right hip rotates outwards while leaning all the way over extending the right arm to the inside of the right leg and the left arm towards the ceiling. After holding this pose, the body is returned to an upright position and the same pattern switches to repeat on the left side.
These poses all involve deep breathing and patience as you slowly stretch and lean into the figures your body is creating. By exploring these different movements and creating freeness in the muscles of the body, it is possible to lessen the effects of performance anxiety. The deep breathing required for the practice helps to lower the heart rate as well as prepare the performer to take diaphragmatic breaths even in uncomfortable circumstances. The practice of meditation strengthens mental focus and stability of distracting circumstances while a feeling of connection throughout the entire body can release wasted energy, which could then be used for a more engaged musical performance.

Of all of the techniques, hatha yoga was the one that had the greatest effect on my everyday life in the long term. I noticed an overall increase in my positivity and a stronger sense of physical well-being throughout every day, particularly during days I had yoga class.
**Alexander Technique:**

Alexander Technique is the method of changing everyday movements and habits to facilitate the relief of unnecessary tensions within the body. It is usually studied in private lessons where a guide or teacher can observe your regular movements, which could include walking around a room or performing on your instrument. It is intended to help ease every day activities with improved coordination. The guide provides feedback for the students on where they could be unnecessarily tensing muscles and wasting body energy. This is a particularly efficient exercise for musicians and is already gaining ground in the musical world. (Zalaquett) Having the control and self-awareness to correct habitual patterns in order to facilitate the release of wasted energy through unwanted muscle tensions can be a major asset to players suffering from performance anxiety. As Alexander himself said, “…it is that organization and support that gives movement its breathtaking beauty and integrity (Alexander Technique International).”

Exercises and analysis of movement are done during performance activity to find where tension lies and how you can alter your body to find ideal alignment. No longer will there need to be concern wasted on whether or not the body is being used to its full potential or if there is an unnatural cause for the anxiety (Alexander Technique International). The Alexander Technique is used to gain an increased awareness of how an action is performed, resulting in an increased level of flexibility and confidence in one’s movement. It is commonly used by musicians everywhere to help with the tension in the body from playing instruments and to find a natural
alignment of the spine. In many ways, the posture taught and the position held when playing a musical instrument is harmful to the body and causes much unnecessary tension. With the Alexander Technique, you can apply a healthy alignment to your playing posture to avoid the effects of performance anxiety, but more importantly prevent future damage such as tendonitis or carpal tunnel. This technique can be very difficult to learn, as it aims to change movement which has become habitual and built up over many years.

F. Matthias Alexander, the creator of Alexander Technique, was an actor. He was a performer and had been improperly using his voice on the stage for years until it caused him to suffer from severe laryngitis. He would temporarily take breaks from the stage to regain his health and then return only to have the same thing happen over and over again. He began to take matters into his own hands researching the cause for his ailing. He discovered ways to speak and move on the stage with a more natural body alignment, moving without holding unnecessary tension so as to not injure himself. This discovery led to the creation of the Alexander Technique. Here are some of Alexander’s own feelings on his work:

When I was experimenting with various ways of using myself in the attempt to improve the functioning of my vocal organs, I discovered that a certain use of the head in relation to the neck, and of the head and neck in relation to the torso and the other parts of the organism, if consciously and continuously employed, ensures, as was shown in my case, the establishment of a manner of use of the self as a whole which provides the best conditions for raising the standard of the functioning of the various mechanisms, organs, and systems. I found that in practice this use of the parts, beginning with the use of the head in relation to the neck, constituted a primary control of the mechanisms as a whole, involving control in process right through the organism, and that when I interfered with the employment of the primary control of my manner of
use, this was always associated with a lowering of the standard of my general functioning. This brought me to realize our manner of use is affecting our general functioning adversely or otherwise, the criterion being whether or not this manner of use is interfering with the correct employment of the primary control (Alexander Technique International).

Studying the work of F. Matthias Alexander results in the improvement of multiple things including: an ease and freedom of physical movement, an overall sense of physical balance, a support and grounding through the body with proper use of the spine, increased flexibility, increased physical coordination, fluid and lively control of your movement, and a very heightened kinesthetic awareness of your surroundings. It is important to note that the term “control,” when referred to Alexander Technique, does in no way mean bound or weighed down. It purely means the power of influence you have over the activity of your body.

There are three stages of learning that are employed through Alexander Technique, the first of which is primary control. Primary control refers to the awareness of your fundamental physical activity, that being your mechanism for balance and support. In order to study this activity you look to the connection of movement between your head and your spine, the two main components of that mechanism. If these two are improperly working in conjunction, then there are ultimately going to be disturbances with your physical balance and support.

The second stage learned in the art of Alexander Technique is called Downward Pull. This stage involves the grounding of your center of balance and support that you have previously gained full functionality of in the first stage of
primary control. This works on achieving a grounding of your lower extremities and pelvis while lifting in the top of the head and upper half of your body.

The final stage of Alexander Technique is referred to as Constructive Conscious Control. The goal of this stage is to accomplish focusing on both the first stage of Primary Control and the second stage of Downward Pull simultaneously. This results in a freeness of the body without strain. When put together, these three stages make up the focus of the Alexander Technique.

Along with the three main stages Alexander Technique, there are a series of body laws deemed by Alexander that are followed in order to maintain a desired body alignment. The first set of laws in the “laws of human movement”. These laws state that tension from within the muscles of the neck are directly associated with the tension of muscles throughout the body and that in order to gain free movement, we must lead with the top of our heads and allow the spine to follow in sequence. Our necks act as a stress control center for the entire body. Whenever we suffer from habituated tensing in the muscles of the neck, it prohibits our bodies from delivering our weight evenly amongst the skeleton. Through the use of Alexander Technique exercises, it helps to release the unnecessary tension in the neck allowing an ease of movement in the rest of the body (Alexander Technique International).

The second set of laws is the “laws of the spine”. The first states that the head must lead. Raymond Dart states, “All invertebrates, from the segmented worm and caterpillar to the crustacean and insect, and all vertebrates from fish to man, are built on the some sort of linear plan.” The human plan begins with the head as the leading
energy source of all movement. The second law states that the vertebrae must follow in sequence. “Without primary movement from the top of the spine to the bottom, the secondary movement from the bottom to the top is chaotic and often ugly,” states Alexander. It is commonly perceived that the spine is located in the back of you and carries the weight of the body from the front. In all actuality, the spine is located in the center of the body and the front is not the only half that carries weight. The third and fourth laws state that the spine must lengthen in movement and that the movement should be equally distributed among the joints of the spine. “Sirens go off in the spine when this law is disobeyed.” Any muscle soreness or pain in the spine is usually attributed to the unequal distribution of weight amongst the length of spine. These laws are very closely related and compared to spine “unraveling” exercises within the field of hatha yoga. Learning to work the vertebrae one at a time is common exercise in any physical technique. As Alexander says, “Artists with a reduced consciousness live their professional lives with a serious handicap (Alexander Technique International).”

In preparation for my thesis performances, I took one-hour long private lessons in Alexander Technique once a month with Melinda Murphy. Melinda Murphy received her certification in 1987 from the Alexander Foundation in Philadelphia, PA and is currently a faculty member at Otterbein College. By having this private instruction I gained a solid foundation of the technique in order to use it to assist my research in performance anxiety.
After discussing a little about the history of Alexander Technique, we began doing hands on physical work. We went through the process of finding your center. To many people, you feel your spine located on your “back” and there is a misconception that your “back” is holding everything on your “front” up. By holding your body in this way, from the toes all the way up through the head, you are causing unnecessary strain to your back and neck muscles. As previously stated, the spine lies through the center of your body. It is also curved, contrary to popular belief, so the straight-backed, “good” posture everyone talks about is unnatural to the way our bodies are structured.

Besides working on the natural trunk alignment of the spine in the sitting position, we also looked at the alignment of the standing position and the weight over the hips. I personally put too much weight into my lower back and onto the heels of my feet. When we aligned my body into a natural position, it felt very odd. I felt as if my weight was shifted much farther forward than I am used to, but the tension in my lower back and upper shoulders that I notice on a daily basis was relieved. It also freed my diaphragm and allowed for easier and more fulfilling intakes of breath. These alignment exercises perfectly displayed the strengthening of Primary Control and the first stage of learning employed in Alexander Technique.

The exercise that correlates with the second stage of learning, Downward Pull, is titled Figure Eights. This exercise is the most accessible to all people, physically fit or not. One simply maintains the body alignment from the previous exercise, then plants the feet into the ground below the shoulders and rotates the hips around in a
figure eight motion. This slight movement of the hips completely releases the muscles in the lower pelvis, allowing for a deeper breath stronger support system of playing. By becoming free and grounded through the center, you are completing the second stage in Alexander Technique while lifting the head and upper body.

The final exercise in the Alexander Technique routine involves the final stage of learning, Conscious Constructive Control. The exercise designated for this stage of learning is called *Constructive Rest*. This is comparable to the hatha yoga pose, savasana. Both are performed lying flat on the back, taking note of any differences in the body’s connection with the ground. Instead of breathing and doing physical exercises, the Alexander activity continues with a ten to fifteen minute body mapping series. Body mapping is similar to finding alignment through Alexander Technique. It is lead by an instructor and they take you through a step by step process of identifying muscles, releasing them, and focusing on their contact with the floor below.

Overall, the exercises of Alexander Technique were the most mentally stimulating of the three techniques. Because of the constant need for conscious awareness of how your muscles are functioning, it helps bring about mental focus and centering from distractions much like meditation would.
The Feldenkrais Method:

Learning to move with less effort makes daily life easier. The Feldenkrais Method focuses on the relationship between movement and thought, increased mental awareness and creativity accompany the physical improvements. Everyone, from athletes and artists to administrators and attorneys, can benefit from the Feldenkrais method (The Feldenkrais Guild).

The Feldenkrais Method is one very similar to that of Alexander Technique. The primary difference between Alexander Technique and the Feldenkrais Method is in the physical exercises. It is also studied in private lessons with a guide or teacher where regular, everyday movements are observed in order to identify where tension in the body is held. Alexander Technique involves assessing habitual physical patterns in everyday life and working to align the body so that it responds healthily to stress stimuli. Feldenkrais Method uses slow and methodical exercises, primarily on the floor, to reprogram the central nervous system and the muscular effort expended in stressful situations. While participating in these exercises, you constantly observe the body’s movements, but you are not consciously bringing awareness to the central nervous system’s reprogramming. It is less alignment and awareness based than Alexander Technique.

While Alexander Technique and Feldenkrais Method share similar goals, the means by which they do it are distinct. A typical Alexander Technique lesson involves taking a close look at the student's pattern of habitual tension during common movements. The student learns not to respond to stressful situations with muscular
tension, and thus improves overall coordination. In Feldenkrais Method lessons, flexibility and efficiency are achieved through these child-like exercises. The performer learns to make finer distinctions in what is moving, not moving and what level of muscular effort is being used. The goal of manipulation during an individual session is to re-educate the neuro-muscular system toward an accurate sensing of the self. (Alexander Technique International) The Feldenkrais Method, with its distinct differences from Alexander Technique, will be interesting to compare using the electromyography technology.

The routine that I performed in the Feldenkrais Method was tailored for me, as a performer. Certified teachers in the technique know many different routines and exercises that are specific to releasing tension in various parts of the body. The exercises that I used were designed for alleviating tension in the pelvis, lower abdominal muscles, diaphragm, upper back, shoulders, fingers, and forearms. The titles of the exercises are Spot over Wrist, Lizard Spine, and Jellyfish Hands. Because the exercises are meant to be child-like and release bodily tension without conscious awareness, the titles of the exercises reflect a visual representation of the movement. The Feldenkrais Method exercises are designed to be used for on one side of the body at a time. For those participants that are able, the exercise is done on the second side of the body through use of mental practice. One simply imagines practicing the methodical movements in their mind and it has the same effect as if it was actually physically done. This makes these exercises really time efficient and also more convenient to accomplish in any sort of environment.
The *Spot over Wrist* exercise was the first that I performed in the thirty minute routine. The exercise is done sitting upright on the floor with the legs folded to one side. For my practice, I began with my left side with my legs folded to the right. In this position, the instructor will lead the participant through the exercise making sure that rest from the movement is taken whenever needed as the technique is designed for relaxation and not for adding stress and tension to previously overworked muscles.

The first movement in this sitting position is to bring your right wrist up to eye level with your hand hanging limply while the left hand supports the upper body as it rests, palm flat on the ground. As the title suggests, the eyes should be focused on a spot directly over the left wrist. From here, the arm, eyes, and torso all follow the lead of the hand as a twist occurs reaching as far as is comfortably possible to the left. At this point in time, the participant takes notice as to how far they were able to move to the left and decides on a visual marker on the surface beyond the wrist. This move is repeated several times, each time noticing the marker beyond the wrist. From here, the exercise undergoes a series of movements to the left in any order and combination. In one such movement, just the head turns to the left while the hand remains in front of the body. In another, just the eyes remain forward while the head and arm turn to the left. In a third, the arm and eyes move to the left and only the eyes return to the forward-facing position. In between each of these movements, the instructor leads the participant in closing the eyes and doing the original movement of both head and arm moving to the left. Once the action is complete, the eyes open and the visual marker is
again noted as to whether it is farther than the previous distance. The participant rests frequently so as to not tire the supporting or the midair arm at any time.

The second section of this exercise is done with both hands palm down on the ground supporting the upper body but angled to the left surrounding the left knee, which is curved to the right. This part of the exercise is to take notice of the contraction and expansion of the pelvis. The participant begins by pushing down on the hands following the head up to the ceiling and then back down to a relaxed position. During this, the instructor reminds the participant to focus on how the pelvis moves in relation to the head. The hips push into the floor as the chest moves upwards and the hips rise up from the floor as the head falls. The next step is to do this movement by activating the hip rather than the chest. The intention of the movement is shifted from the head and chest to the rise and fall of the hips against the floor. Then this movement is reversed and the participant focuses on contracting the lower abdominal muscles as the head and chest fall and expanding them as the pelvis rises towards the ceiling.

The final portion of this exercise is done yet again supported upright by your left hand with the legs crossed to the right. The right hand relocates so that it is crossed over on top of the head with the right hand touching the left ear. Instructions are given to bring the left shoulder to the left ear. It is typical to want to bend the head so as to touch the shoulder but instead the torso should engage in a sliding motion to bring the shoulder up to the ear without removing the left palm from the ground. Lastly, an alternation is done of the left ear to the left shoulder and vice versa. After this exercise,
the pattern is meant to be repeated on the right side of the body with the legs crossed to the left.

The *Lizard Spine* exercise is one of the most beneficial for the relief of tension in the muscles of the back and shoulders. The goal of this exercise is to move naturally like a lizard would, releasing tension within the spine and connecting the movement of the top of the head to that of the bottom of the spine in the tail of your body.

It begins lying on the stomach; the head is turned and rested on its side, arms lying palms down on the floor with fingers outstretched. The participant is instructed to lift the head, like a lizard would, and inspect the surroundings to the right and left. As the participant will feel, it is rather difficult to look far to the right or left without moving any other part of the body. This simple move of lifting the head, examining the environment, and then resting again is performed several times while focusing on the kinesthetic feeling of the body as it is happening. The instructor reminds the participant to lift the head from the upper back of the skull, like a lizard would, creating a more natural alignment of the spine without leading with the chin. The next step in the exercise is to examine what parts of the body need to move in order to continue the line of sight to both the right and left. The natural bodily reaction to this movement is to engage the torso and then the legs, bending the knee up towards the shoulder in a crawling motion, in order to further extend the visual line of sight. Once the torso and legs are both engaged in this movement, it is repeated several times. The student brings awareness to the natural movement and connection between the head and tail of the body and their relationship to the freeness of movement in the body,
particularly in the back and torso. Once this floor work is completed, the exercise can then be applied to an upright position, making it applicable to everyday movements, such as playing an instrument or walking down the street. The participant is instructed to stand and experience the same lizard movements in an upright position. Following this is a simple walk around the room experiencing the full connection and feeling of awareness of the body from head to tail and release of the muscles of the back and freeness of breath.

The final exercise completed in the Feldenkrais Method was the one that I felt was most beneficial to me as a musician. This exercise is titled *Jellyfish Hands* or *Bell Hands*. This exercise is designed to release tension in the forearms, wrists, and fingers, which is extremely beneficial to musicians as we are constantly working on playing with a more relaxed finger technique. It is also the exercise that is the most accessible to any sort of environment. This can be done in roughly every location where both hands are fully available. Similar to the other exercises of the Feldenkrais Method, this exercise is done first on one side of the body and then on the other. In my routine, I began with the right hand and continued with my left hand using imagery. This activity is the one most commonly done using imagery as it is not as physically complex as some others.

It begins sitting upright in a chair with both hands resting on top of the legs. The right hand is engaged first as it is gently lifted from the lap and held in midair, the hand dangling limply from the wrist. The instructor leads in moving the hands gently open and closed like a jellyfish would in the ocean, paying close attention to the event
when all five fingers of the right hand contract and touch each other. This movement is done in a repeated motion. The arm and shoulder are allowed to get involved and the *Jellyfish Hand* can be "swimming" or pulsating in any sort of direction, whichever is most comfortable for the participant. The instructor then leads the student through a series of hand motions in which the fingers touch in alteration. The succession of fingers is dependent on the preference of the participant or instructor. The thumb is always involved in the series as the "home base" for the fingers. One example of a finger-touching series would be a one-to-one finger series. In this series, the participant slowly moves through every combination of the thumb and one other finger. Between each series, the participant will return to several repeated expansions and contractions of the original five-finger *Jellyfish Hand*. During these series, the instructor will remind the participant to focus directly on how the fingers are moving, whether stiff or relaxed, and to pay attention to what the "unused" fingers are doing. In a two-to-one finger series, the other two fingers that are not involved could either be flowing freely along with focused fingers, or they could be stiff and hanging back from the swaying motion. The participant is encouraged to maintain the flowing motion throughout the hand even if the unused fingers. This exercise succeeds in reducing finger tension in musicians. Instrumentalists know it is efficient to play with the fingers relaxed and moving closely to the keys or strings of the instrument. When performance anxiety occurs, it is instinctual to tighten the grip on the instrument creating tension in the fingers. This exercise practices relaxing the fingers when the muscular relationship in the hand is focused on specific fingers, for example when
hitting keys or strings on an instrument. While doing this exercise, one is not bringing conscious mental awareness to the fact that this is what is being improved, but instead it is reprogramming the central nervous system by doing these movements in a child-like manner. The exercise's slow and methodical nature is also helpful in reducing the heart rate and steadying the breath.

Overall, the Feldenkrais Method was the most helpful with a consistency of both mental and physical relaxation. The patience involved in these exercises prepare the participant mentally for the endurance of performance and also readies them to handle distractions from the audience while the physical movements connect the body as a unit, releasing tension and allowing for freeness of breath.
Electromyography Technology:

For my thesis I used electromyography technology (EMG) to gauge the effects that the physical techniques had on my performance anxiety. The software used was the ProformaVision EMG device that the Ohio University School of Music obtained in the fall of 2011. This technology measures muscular tension by using electrodes to analyze when the muscles contract and release in response to stimuli. The device can be used to observe muscle tension in the neck, shoulders, hands, fingers, arms, and other areas typically tensed during performance. (ProformaVision)

Of the technology’s many accolades, one is from our Ohio University Co-Chair of the Keyboard Division and Professor of Piano Gail Berenson. She says:

ProformaVision enables students and their teachers to finally see what is taking place physiologically as they play. They are able to make changes in their physical approach to the instrument to achieve greater efficiency and effortlessness in their playing. ProformaVision is a positive addition to the body of piano, piano pedagogy and injury-preventative literature. (ProformaVision)

Ohio University is the only school in the state to currently have access to this technology, making this research new and crucial to the art of music.

On the body, you may select two different locations to monitor with the electrode sensors. The most frequently monitored muscles, the ones I tested throughout my performances, were the extensor muscles and the indicis muscles in the upper side of the forearm, into the fingers and the trapezius muscle and other muscles of the scapulae in the upper back and neck. The electrodes connect to a small wireless device located on a belt the performer wears around the waist. This device sends radio frequency signals, measured in hertz, to a computer. On the computer monitor is a
graphed reading of the tension picked up by the electrodes on the skin. The right and left side are divided so as to monitor the two halves of the body separately. The display on the left hand side screen corresponds to the left side of the body and the display on the right hand side of the screen corresponds to the right side of the body. There are two moving lines on each of the right and left sides of the graph, one of them the color blue, and the other, the color red. These each represent one of the two areas of the body with sensors present. For the purposes of my project, the red sensors represent the extensor and indicis muscles of the hand, arm, and fingers, and the blue sensors represent the trapezius muscles of the shoulders and back.

When watching the EMG technology during use, you will notice that the graph lines are rising and falling. While high spikes of the graph may be a negative attribute of performance anxiety, it is only human for the lines to be moving. If the lines were to be completely at rest, that means that either the performer is dead or the machine is somehow improperly connected. With this in mind, the graphs from my public performances were analyzed in a specific way.

High risings in the graphs are not ideal but are acceptable as long as they are followed by drops of equal value. The reasoning behind this is that in any sort of activity, your muscles are going to be in use. For the playing of a musical instrument, particularly with woodwinds and their fast paced technical passages and diaphragmatic breathing, the muscles of the forearms and back are going to be engaged. However, for every muscle contraction there must be an equal release by the opposing muscle. The extensor muscles located on the top of the forearms must be released by the
contraction of the flexor muscles located on the underside of the forearms and vice versa. Muscles work collaboratively in pairs against one another. Because of this, if a particular sensor line lies high on the graph and yet has very closely located peaks and drops, it is more likely that the performer is unnecessarily tensing their muscles. If there are very large peaks and drops present, it would indicate that the muscles are more synchronized. The larger intervals mean that the muscles are contracting and releasing in tandem instead of one overworking the other.

With the use of the electromyograph, I had a visual representation of the effect the physical relaxation methods had on my performance anxiety. While my own experiences and recollections are important to the research, this data provided solid feedback on the lasting benefits it could have.
Personal Reactions:

This research has completely changed my life as a performing musician and that fact is clearly exhibited by the results of this project. The performances were designed so I would be coming directly from an Ohio University Wind Symphony rehearsal and I would not be mentally prepared before engaging in the technique. Before taking the stage, I performed my thirty minute routine in the designated technique and wrote in the journal about my anxiety symptoms.

For my first thesis performance, I played the fourth movement, “Bacchus,” of Benjamin Britten’s *Six Metamorphoses after Ovid for Solo Oboe*. I used this performance as my baseline recording, testing my performance anxiety without the use of any proactive techniques.

For my second thesis performance, I played the second movement, “Phaeton”, of Benjamin Britten’s *Six Metamorphoses after Ovid for Solo Oboe*. I used this performance as my testing of performance anxiety after the use of Alexander Technique. My routine for this particular technique consisted of doing Body Alignment (approximately 5 minutes), Constructive Rest (approximately 15 minutes), and Figure Eight Hips (approximately 5 minutes).

For my third thesis performance, I played the second movement of Camille Saint-Saën’s Sonata for solo oboe. I used this performance as my testing of performance anxiety after the use of the Feldenkrais Method. My routine for this particular technique consisted of doing the exercises Lizard Spine (approximately 10
minutes), *Spot over Hand* (approximately 15 minutes), and *Jellyfish Hands* (approximately 10 minutes).

For my final thesis performance, I played the first movement of Antonio Vivaldi’s *Concerto in A Minor* for solo oboe. I used this performance as my recording testing my performance anxiety with the use of Hatha Yoga. I did poses such as *cat*, *cow*, *triangle*, *child’s pose*, *downward dog*, *savasana*, and *tadasana* throughout the thirty minute time span.

**First Performance- Control:**

Before the first performance, testing my baseline anxiety, I felt very physically unfocused. Prior to the performance my hands were shaking and I did not feel centered or grounded while standing to play. The shaking in my hands and arms appeared during the technical passages of the piece and affected my mental focus. I would catch myself thinking of other things and not of the music in front of me. I frequently thought about my trembling hands and hoped they would stop. I also caught myself thinking about noises being made by audience members and about the graph movement behind me instead of focusing on the music and the sound coming from my instrument. I also felt an increase in my heart rate as I took the stage to perform. My palms were sweaty and my face felt flushed. I was very quickly out of breath and would take air into my upper chest and not expand my lungs fully. After having been practicing these relaxation techniques for almost a year and returning to the extremes of my performance anxiety, I realized that I had not felt so unsteady while performing
in a long time. I assume this was mostly because of the physical symptoms I suffered from but also because of the affect of my mental abilities as well. In that moment I realized that the learning of the techniques had already had an impact on my life as a performer. The rating of this first performance before I took the stage was 9 out of 10, meaning I felt anxious both mentally and physically which was to be expected in my baseline performance.

When listening to my performance, I notice a couple of moments of finger technique error, possibly due to the intense shaking in my hands and fingers. Also in the fast technical portion of the movement, my tempo did not remain steady and I played incorrect notes in the beginning half. This occurred during the technical sixteenth note measures 37-40

While listening to the professional recordings I was able to hear that whenever I took a breath, it resulted in a short gasp of air audible to the audience. Various cracking and misspeaking of lower notes occurred several times in larger interval leaps throughout the piece. One great example was in m. 16 with the low F# and D#.
Towards the end of the movement during the arpeggio runs, my pitch rose and my embouchure pinched as I entered into the high register of the instrument. Physically you could see the strained expression in my face before the performance. I emitted a large sigh before I put the oboe to my mouth, indicating my nervousness. My feet and weight shifted around, as I was not centered over my feet nor grounded in my pelvis. Another indicator of my performance anxiety was my breathing as I was not taking in large breaths of air.

**Second Performance- Alexander Technique:**

The day of the second performance I felt very physically tense. The “Phaeton” movement of the *Six Metamorphoses* by Benjamin Britten requires a lot of rapid tonguing which had been causing me extreme difficulty earlier that day in my private oboe lesson with Dr. Fiala. I felt sore in my lips and in my upper back from straining to tongue lightly while practicing. Again, coming directly from a Wind Symphony rehearsal, I was warmed up but not in the right mental place for an immediate public performance. My palms were sweaty and my mouth was dry. This caused me difficulties with technical passagework as my hands were sliding on the keys. Also, my reed was drying out in my mouth causing response problems of notes in the extremes of my register. My hands and fingers were tense and shaking like on the control performance. After performing my Alexander technique routine, for approximately thirty minutes, I felt much more relaxed. My palms were still sweaty and my mouth was still slightly dry, but the shaking had subsided in my hands and
fingers and I felt the most mentally focused. I had lost the tension in my tongue and the back of my neck and felt very comfortable when taking the stage. Physically, I did not feel completely relaxed due to the sweating and dry mouth, but I did feel focused on performing. I was not distracted by any noises made in the audience or by any negative thoughts in my mind. I purely was thinking about the music in front of me, and the output from my instrument. The rating of this first performance before I took the stage was 4 out of 10.

When listening to this performance, I notice very few cracks on the many articulated notes. If you look at the first few measures of the movement, you can see the multiple accents implemented by the composer. These need to be made using light articulation with the front of the tongue, but with performance anxiety, the tongue can become labored causing cracks in the sound.

From listening to the professional recordings I was able to hear that there was an extra note, or *bloop*, between the leaps from A to C in the middle of the piece before the “agitato” section. The lower register spoke clearly and there was a smoothness of phrasing between long passages such as between mm. 35-38.

I am pleased with my tone during the performance and the tapering of phrases. I maintained a light articulation without laboring during dynamic sections. I executed
leaps to higher and lower registers cleanly. I was extremely pleased with this recording and performance and it is one that I will use for professional endeavors.

**Third Performance- The Feldenkrais Method:**

For the third public performance I felt very dry in my mouth and my heart rate was up. I felt feverish all day. The day prior to this performance I discovered that my instrument was broken. Because of this, my instrument had to be taken into a professional and I was playing on Dr. Fiala’s back-up instrument. Playing on a different instrument is very difficult as there are unfamiliar pitch tendencies on particular notes and an overall kinesthetic difference of the tension and location of the keys and the pressure required to depress them. I had only practiced on that instrument for roughly twenty-four hours and therefore was nervous.

Around noon on the day of the performance, Dr. Fiala and I realized that the Glidden Recital Hall had been double-booked with another performance. This caused me to reschedule in a different room within Glidden Hall and gave me less equipment-preparation time. With all of this added stress, we decided to switch the musical selection I would be playing that day. Instead of performing the third movement of Saint-Saëns’ Sonata for solo oboe I would be playing the second movement. This movement I am slightly more comfortable with, but I still felt as nervous as I was during the prior two performances with the added stress of the complications.

When completing the Feldenkrais Method routine, I quickly felt my nervousness ease. I felt a calm sensation through my arms and legs but more
importantly down my back. I felt my hips align with the rest of my pelvis and I felt extremely grounded in my feet when standing to play. I felt freeness in my breath and a strong air support through all of my octave leaps and slurred passages. I also found ease in my upper register as I played longer phrases within the “ad libitum” sections of the movement for example, in the first measure of the piece.

My fingers felt free to move and I felt no constriction from my wrists into my pinky fingers. My mind would shift focus every now and then but overall, I felt very happy and can remember smiling and really enjoying myself while I was playing. The rating of this first performance before I took the stage was 3 out of 10.

When listening back to this performance, I first notice the sharpness on the opening note. This was quickly fixed by the adjustment of my embouchure and demonstrated my ability to recover swiftly from performance error signifying my high level of mental focus. The breath control during this performance was great as I had clean, expressive passages with large leaps between notes and the use of the extremes of the oboe’s register such as in m. 6.
The tapers at the end of notes were clean and exhibited good breath control. Many of the technical passages were accomplished precisely. There was only one in m. 51 that rushed rhythmically.

The moments of high register and low register playing had a nice tone and no cracking at the front of the notes. There was one moment of intonation trouble in the upper register during a crescendo where the note is pushed to a forte. This was not as controlled as it needed to be. The performance was overall well done and showed both the technique and expressive playing necessary.

**Fourth Performance- Hatha Yoga:**

Before the final performance I felt very jittery and unfocused. I found myself feeling restless throughout the classes during the day in anticipation of the performance that evening. After I performed my yoga routine, I felt physically relaxed. My arms were loose and my lower back was free from all tension. My mind however felt rather unfocused. I felt sleepy and was continually yawning up until the performance. I can remember feeling completely “out of body” during the performance. I had a moment of concentration failure when I neglected to come in on time after a series of rests in the music after m. 47.
I was not mentally focused. I had no embouchure pain or endurance problems however. The usual adrenaline rush that is received before a performance was non-existent and instead I was completely at ease. This was great for my physical well being, but I believe that was what caused my lack of mental preparedness. During the performance I felt as if I was rushing through many of the technical passages when looking back, I was actually dragging at a much slower tempo. My physical being felt as relaxed as ever yet my mind was elsewhere. The rating of this first performance before I took the stage was 5 out of 10. The rating level of this performance was so high despite my relaxed physical feeling because of my lack of mental activation. I was more nervous for this performance because I did not feel mentally prepared to take the stage.

When listening back to this performance, there were few moments of finger technique errors, but the tempo began much slower than intended. It felt as if I was struggling to keep up and lethargic. The technique was clean and the tone was clear, such as in mm. 40-42, which was positive because I had less time to prepare this piece as opposed to the others.
The lyrical line felt long and expressive despite the slower tempo and lethargic feeling. The pitch did not remain steady throughout the performance. Many times it would fall flat in the lower register and rise sharp in the upper register. This occurred especially during moments of large slurs. Overall the technical passages were clean and the musical shapes were clearly phrased.
**Electromyography Results:**

The use of the electromyograph added a special component to the research of these physical methods of relaxation. Not only could I compare my own thoughts and feelings, as well as the feelings of my professors, important but I had a visual representation of the impact the physical techniques were having on my playing. This assured the work’s effectiveness.

**First Performance- Control:**

When watching the EMG of the first recording I noticed that the overall tension in my right side was much higher than that in my left. Much of this is typical of the graphing I have seen of the other oboe players in the studio at Ohio University. This is because of the added tension of supporting the instrument by the thumb rest on the right hand. The difference in levels should not be this extreme however. It was difficult for me to maintain a low, “baseline” level on the EMG for a long period of time. It just barely reached the bottom of the graph. I rushed into playing without reaching a good level of relaxation. I also noticed that the tension in my fingers was much greater than that in my back. The left side of the EMG stayed relatively consistent throughout the performance in regards to the peaks and dips of my forearm extensor and back tension. The right side, when rising, would continue to spike without relenting. During the more technical passage of the movement, my tension rose in both my forearms and back and in both my left and right sides. In comparison to the other EMG recordings, this was by far the tensest overall.
Second Performance- Alexander Technique:

The EMG of the second public performance was very interesting to compare to the first performance. Not only were the two sides, both right and left, closer together in levels of tension but also the difference between forearm extensor and trapezius muscle tension was also reduced. They maintained a close relationship throughout the entire performance, with exception to a couple spikes, and for the most part rose and fell in tandem. The starting levels for the EMG were much lower for this performance and in general the muscular activity also dropped at the end of the piece. In comparison to the first performance, it felt more natural to lower the tension before performing for the “baseline” levels than in the first performance, when I had difficulty bringing it down for more than a couple of seconds. I felt that between the two sides there were many more dips in this performance, balancing out the rises of the tension. The left side overall was similar to the first performance if not slightly more tense in my back at certain points. This could have been because of the tension from rapid tonguing resulting in contracting that region. I do see a drastic improvement however in the tension of the right side of my body. There were very consistent dips with peaks and it maintained a much lower average than the first performance.

Third Performance- The Feldenkrais Method:
The graph of the third performance was very similar to that of the second one. The right side was slightly higher than that of the left but the difference between levels was not as great as it was in the first control performance. The individual lines on both the right and left again peaked and dipped in tandem, but they were separated as the extensor muscles were slightly tenser than those of the trapezius muscles. At moments the graph dipped so low that it seemed to be in the starting “at rest” position. This was a perfect comparison of the graph between slow lyrical passages and faster more technical passages because this piece of music exhibits both of those things. The slower lyrical sections naturally showed less muscle activity in comparison to the more technical passages. Despite this the peak-to-dip ratio was much more equal than in other performances.

**Fourth Performance- Hatha Yoga:**

This graph was one that was extremely interesting to compare to the others. This two graphs on both the right and left were higher than the prior two performances but it was still more relaxed than first baseline anxiety performance. The peaks and dips were at a more rapid rate than the first performance but the individual peaks rose to a very high level, particularly on the left side. The left side that was typically much lower in the previous performances rose to the highest point ever during this piece. The peaks would drop down eventually but it was interesting to see how high they were on this day. There were large drops exhibited in the muscular engagement during the rests of the piece. There was one interesting technical passage in this piece where
the graph climbed higher in both the extensor muscles and the trapezius muscles as the pitches rose. It was surprising to see that the EMG levels did not rise as I recovered from incorrectly entering from the rests and missed the entrance. The performance was overall well done despite the false entrance and slow tempo. There was synchronization at the end between the levels and I think the technique was helpful but the mental focus was not present.

It is interesting to see how the different graphs differed from each other. The second and third performances were noticeably the most effective from the output of the EMG. Dr. Fiala, as well as other audience members, picked up on this too. The comments tended to be similar from everyone, meaning that the level of anxiety that was visible in my body language and the EMG portrayed accurately what was going on with me.

**Overview of Comments:**

For the first performance Dr. Fiala said, “The vibrato…sounds too high and nervous. There was some low register difficulty.” She was able to clearly hear the nervousness from my physical shaking in the tone of the instrument. Three audience members commented on how nervous I appeared for the first performance and many noticed me struggling.

The second performance was very much the opposite. Not only did the EMG show the unification of my physical presence but the viewers picked up on that as well. Two different audience members commented on how much more relaxed I
appeared during this performance. To quote one of them, “You look less nervous at this performance as opposed to the first one earlier this week. I also hear a difference in your sound. You sound less strained and anxious.” Dr. Fiala commented, “You are projecting a confident sound, good articulation. You are blowing through the phrases well. Vibrato is more controlled than first performance.” The use of Alexander Technique definitely was more beneficial for my performance anxiety than letting it take control of my playing.

The final performance was surprisingly one of the less effective ones. The lethargic sound of the music and the loss of mental focus made this seem comparable to the first performance. The difference however is in my own physical feelings. The yoga made me feel as physically relaxed as possible and had the most impact on my daily life as a performer in general. The question is now: should it be done directly before a performance or earlier in the day? This question is a potential area for future study. Dr. Fiala did notice the slow tempo. She said, “The performance is good but it slightly lacks energy…,” and an audience member stated, “You seemed about the same as the first performance.”

Last but not least, the third performance is the one that I felt was overall most effective. Although there minor mishaps as opposed to the solid second performance, the Feldenkrais Method was the technique that I felt had the most effect overall to my performance anxiety. The performance and EMG showed so much improvement and I personally felt great before performing. This was a performance where I was playing on a foreign instrument in a new location and I had to solve one crisis after another.
The fact that, with all that stress and anxiety, I was able to bring my levels down that low and perform at such a high level was shocking. Dr. Fiala was impressed by the work. “I was amazed with what you did after having a very stressful pre-concert time. You played a very expressive opening…” The best part was that I completely enjoyed myself and remembered my time on stage during this performance. Even my audience members picked up on the joy I had. One person said, “You looked like you were having a lot of fun.”

With the use of the electromyography device, I was able to visually compare the results that these physical methods of relaxation had on my performance anxiety. It was a crucial aspect to this research and is a new facet to the study of anxiety and muscular tension within the music world and fine arts community as a whole.
Conclusion:

The last time I took a beta blocker in order to enhance my performance was in June of 2011 and it has been a whole year since then. It is incredible to look back to one year ago and see the impact that this research has had on my life. I am now, for the first time ever, excited to perform for audiences and am independent of any prescription medications. I am able to channel my negative thoughts and energy from performance anxiety into positivity which then translates into my oboe playing. My professors have noticed the improvement made in my instrumental abilities and overall performance composure.

These three physical relaxation techniques are clearly effective for music performance anxiety. Nevertheless, it would be impossible for me to evaluate which is the most effective technique for overcoming performance anxiety based on one short-term study with one research subject. Performance anxiety is a personal condition and it affects everyone in a different way. The same goes for the use of these techniques. Some of these exercises may assist certain performers more than others and the results are subjective. I wanted to find multiple exercises that are accessible to all performers in order to give artists several options to help with stage fright.

With this research, I have been able to identify many opportunities for musicians to ease tension in their performance and gain mental focus. I have given three different public lectures of varying lengths to students of Ohio University, one in particular to students of the School of Music in the Glidden Recital hall, and the other two to varying crowds of people with multiple interests. I have already heard feedback
from members of the student body who have used the exercises I’ve researched, found them to be successful, and are excited to continue learning them in greater detail.

It is delightful to have begun accomplishing my goal of bringing this research to light so that other artists can benefit from these techniques. I am honored to have been able to research something so personal to me and to have accomplished such improvement in my own personal life. This is a small step in gathering data of the effects of these physical methods of relaxation on the human body but I hope that it is a starting point in much more research to come.
Annotated Bibliography


This book by Barbara Adrian is an applicable set of descriptive exercises of Laban Movement Analysis and their correlation to the world of acting. The exercises revolve around Laban’s four concepts: Shape, Body, Effort, and Space. The book is separated into different lessons and given approximate time lengths full of different activities involving breath, vocal presence, articulation, shape change, states of mind, and many more. It not only includes exercises but also a brief history of Rudolf Laban’s work as well as anatomic illustrations to reference in the book.


This site by the Alexander Technique International is devoted to the connection of students and teachers of the Alexander Technique throughout the world. This article specifically describes the differences between the two techniques and how to decide which is right for you as a student. It is very helpful to distinguish those key differences that make the techniques significant in their own ways.

This book provides information about the neural basis of music making. It, in explicit detail, analyzes the brain through music using a variety of different instruments as a reference. Everything from the voice to wind and stringed instruments are used. It combines knowledge of both music and brain functioning to try to understand the “behind the scenes” processes of anxious thinking, describing what goes through our heads as we play music.


This article provides several lists of fear quenching strategies for public speaking. With lists ranging from “preparations weeks in advance of the performance” up to “what you can do in the moment of fear”, he shares clever tips and tricks as to how to cure your nervousness.


In this article, Arneson investigates behavioral changes in individuals who experience performance anxiety and provides many options of treatment for these behaviors. He
describes side effects of anxiety in great detail such as sweating and trembling and uses these side effects to assist the music playing rather than hindering it.


The over arching purpose of this book is to cover three important questions. 1. What is “zen”? 2. How does the human brain actually function? 3. What really goes on in meditation and enlightenment? 4. How does the brain transform when entering the last stage of “ongoing enlightenment”? For the purposes of my thesis I am focusing on Chapter II: Meditating. This chapter discusses physiological effects of meditating. Meditative attention was reviewed with reference to things seen and heard in a meditative state as well as effects on the human heart rate.


This thesis analyzes the psychological side of anxiety and how it affects the life and well being of university students. It provides real-life examples of students working on their college degrees in music and investigates different personal experiences involving anxiety and stage fright.

This article goes into detail about the ups and downs of stage fright, from its symptoms to the effects it has on the human body. It lists and describes several controlling substances that may have an effect on the body while suffering from performance anxiety such as vitamins, exercise, and even the food one consumes. It also explains ways to trick the mind from the harboring effects of stage fright and how to listen to body signs in order to deal with social pressures.


This book talks explicitly of performance anxiety and how the stress of performance can take a major toll on the body. Coming from Stuart Dunkel, a professional oboist, his account features wind instrumentalists and how the performance anxiety affects the breathing and respiratory system in particular. His advice involves not only stress from live performances and recording sessions but also from audition rejection and dealing with responses and criticism.


Donna Farhi’s book is an ode to breathing to create a better quality life for everyday individuals. The book includes exercises in breathing techniques that are easily accessible for everyone. The exercises are not only designed to improve your daily
living and overall comfort but to assist diseases such as depression, asthma, and arthritis which can be detrimental to your health.


This book is helpful towards managing musical performance anxiety in an audition context. In comparison to his book *Performance Success*, this book is less a self-help book, where you journal along with every exercise about what you are experiencing in your performance. Instead, it is a step by step advice guide to performing well under pressure. It gives specific scenarios of professional musicians of different mediums around the country and how his process of handling anxiety has successfully amounted to their acceptance into major symphony orchestras and playing professions. Through visualization training, practice of optimism and physical relaxation, he advises you on how to “get out of your own way” in order to handle the stress of performance situations with grace.

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This book takes a more scientific and detailed approach on dealing with performance stress and anxiety than Don Greene’s other performance help book, *Audition Success*. It takes you on a step by step process through creating long term and short term goals, tricking the mind with sayings and focus points in order to bring stress levels down,
and how to stay positive and optimistic when dealing with performance anxiety. Through following the steps of the process, making frequent recordings of your playing, and writing self-reflections as you listen to yourself, you can learn to control your stage fright.


This book talks in detail about the comparison between the physical, mental, and social aspects of stage fright (in reference to music, specifically violin playing). From a lifetime of playing opportunities, Kato’ Havas draws from her experiences in the art of music to talk about stage fright, the causes and cures, keeping an open mind about the treatment of anxiety with and without medicine.

“Herbal Medicine”. Web page. *Holistic Online*. 2007. 24. Jan. 2011 <http://www.holisticonline.com/remedies/anxiety/anx_herbs.htm>. This article provides a large list of herbs that correlate with performance anxiety. Many of the herbs listed are said to provide nerve calming effects and sometimes a sleep enhancer. The herbal descriptions provide dosage information, how to make it, and the detailed effects of the herbs on your system.

This book talks about the science of emotional suspense and its cooperation to specifically music performance. It discusses the five scientific response systems involved when expectation is evoked into a situation. These five systems are in collaboration with musical devices which allows help to better scientifically understand the correlation between their name and process. It is a tool designed for musician’s to better understand their performance fears.


This book is extremely accessible and is designed to help the reader live in the most healthful and enjoyable way possible. By discussing qualities of breathing and mindfulness you can help overcome health problems and illness, as well as change your response to stress. In order to live in the most beneficial way possible, you must have a full self awareness and this book helps you find that awareness.


This book is an assisting guide to performance for performers everywhere using three steps. The first step is focused in practicing and technical preparations such as memorization and musical interpretation. The second step talks particularly about performance anxiety and how to go about transforming a performer into a confident player. The third step discusses the physical aspect of performing strain and the
process of maintaining physical health from anxiety. Through these processes, one can draw a designed plan on how to become a healthier and less fretful performer.


This article gives an in depth step by step process of how to diagnose and begin curing your performance anxiety without the use of drugs or medications. Everything from nurturing the mind and spirit to deep breathing and relaxing the body muscles through stretching is used to assist one with the stress of performing without outside help.


In this article, Moult gives step-by-step instructions on his method to ridding performance anxiety in a musical setting. He uses oboe players as a specific example in terms of the breath support and advises on ways to remain calm in the moment of performance.


<http://www.proformavision.com/index.php?option=com_content&view=article&id=35&Itemid=190>
This website is a resource particularly for using the ProformaVision electromyography technology. Not only does it give a descriptive background of the software but it also shows its correlation to musicians and performance. The showcased accolades from multiple practitioners of this technology are very useful for highlighting its current success in the field.


This article is a first hand account of the musician, trumpeter Bryan Sander’s experience suffering from performance anxiety and his use of hypnosis to solve the problem. As a long term sufferer of performance anxiety, he writes about his previous experiences using methods such as yoga and beta blockers and their effect on his playing.

*Martin Schuring’s book is a treatise on oboe playing. It goes into detail about oboe techniques such as fingerings, breathe support, and the use of the Alexander technique. Through his exercises in practicing and experiencing the performance reality, he assists players in conquering their performance anxiety through preparation.*


*The Feldenkrais Method of Somatic Education web page gives a thorough background of the art of Feldenkrais as well as provides a biography of Moshe Feldenkrais and a listing of practitioners in local areas around the country. This site is a useful guide to anyone looking for primary information on the Feldenkrais Method as well as other supplementary materials.*


*The Anxiety Disorders and Treatment Center provides a list of anti-anxiety medications used most popularly throughout the United States and gives profiles on those drugs. The list contains several options such as antidepressants, inhibitors, beta-
blockers, tranquilizers, and anti-convulsants. The medical profiles provided are helpful gaining more information on prescriptions commonly used.


*This book is a tool for music performers on all basic performing aspects including performance anxiety and music’s place in the education system. Most importantly is its application of information on the emotional center in the brain and how it responds to performance anxiety.*


*This article explores the physical aspect of dealing with performance anxiety in reference to the muscles in the human body. Relaxation techniques are given to help reduce physical stress through anxiety. Through examination of the muscles, by following the self-regulation test, one is able to determine key points of muscle tension and relieve them.*
Appendix
Performer Reactions:

*These are the journal entries completed on the days of the public performances.

Thesis Performance #1

For my first thesis performance, I played the fourth movement, “Bacchus,” of Benjamin Britten’s *Six Metamorphoses after Ovid for Solo Oboe*. I used this performance as my baseline recording testing my performance anxiety without the use of any proactive techniques.

Performer Reactions:

Before this performance I felt very physically unfocused. The performances were designed so I would be coming straight from a Ohio University Wind Symphony rehearsal and I would not be mentally prepared unless done by the technique. Prior to the performance I was shaking in my hands and did not feel centered or grounded in my legs while standing to play. This carried over into the performance. The shaking in my hands and arms appeared during the technical passages of the piece and affected my attention of mental focus. I would catch myself thinking of other things and not of the music in front of me. The thought that frequently inhabited my thoughts was of my trembling hands and hoping they would stop. I would also catch myself thinking about noises being made by audience members and about the graph movement behind me instead of focusing on the music and the sound coming from my instrument. I also felt
an increase in my heart rate as I took the stage to perform. My palms were sweaty and my face felt flushed. I was very quickly out of breath and would take air into my chest and not deep within my diaphragm. After having been practicing these relaxation techniques for almost a year and returning to the extremes of my performance anxiety, I realized that I had not felt so unsteady while performing in a long time. I assume this was mostly because of the physical symptoms I suffered from but also because of the affect of my mental abilities as well. In that moment I realized that the learning of the techniques had already had an impact on my life as a performer.

Rating of anxiety right before taking the stage: 9 out of 10

**Playing Assessment:**

When listening back to my performance, I notice a couple of moments of finger technique error, possibly due to the intense shaking in my hands and fingers. From listening to the professional recordings I was able to pick up within the sound that whenever I would take a breath, it resulted in a short gasp of air audible by the audience. Various cracking and misspeaking of lower notes occurred several times in larger interval leaps throughout the piece. In the fast technical portion of the movement, my tempo did not remain steady and I played incorrect notes in the beginning half. Towards the end of the movement during the arpeggio runs, my pitch rose and my embouchure pinched as I entered into the high register of the instrument. Physically you can see strain in my face before the performance. I give a large sigh
before I put the oboe to my mouth, indicating my nervousness. My feet and weight shifts around, as I am not centered over my feet and grounded in my pelvis taking in large breaths of air.

**Graph Assessment:**

When watching the EMG of the first recording I noticed that the overall tension in my right side was much higher than that in my left. Much of this is typical of the graphing I have seen of the other oboe players in the studio at Ohio University. This is because of the added tension of holding the instrument up by the thumb rest in the right hand. The difference in levels should not be this extreme however. It was difficult for me to maintain a starting level on the EMG for a long period of time. It just barely reached the bottom of the graph. I rushed into playing without receiving a good level of relaxation. I also noticed that the tension in my fingers was much greater than that in my back. The left side of the EMG maintained rather consistent with readings in regards to the peaks and dips of my forearm extensor and back tension. The right side, when rising, would continue to spike without relenting. During the more technical passage of the movement, my tension rose in both my forearms and back and in both my left and right sides. In comparison to the other EMG recordings, this was by far the tensest overall.
Thesis Performance #2

For my second thesis performance, I played the second movement, “Phaeton”, of Benjamin Britten’s *Six Metamorphoses after Ovid for Solo Oboe*. I used this performance as my testing of performance anxiety with the use of Alexander Technique. My routine for this particular technique consisted of doing *Body Alignment* (approximately 5 minutes), *Constructive Rest* (approximately 15 minutes), and *Figure Eight Hips* (approximately 5 minutes).

**Performer Reactions:**

Before the performance I felt very physically tense. This particular movement of the *Six Metamorphoses* by Benjamin Britten requires a lot of light tonguing which had been causing me extreme difficulty earlier that day in my private oboe lesson with Dr. Fiala. I felt sore in my lips and in my upper back from straining to tongue lightly while practicing. Again, coming directly from a Wind Symphony rehearsal, I was warmed up yet not in the right mental place for an immediate public performance. My palms were extremely sweaty and my mouth was very dry. This was causing me difficulties with technical fingers passages as my hands were sliding on the keys. Also, my reed was drying out in my mouth causing response problems of notes in the extremes of my register. My hands and fingers were tense and shaking like on Tuesday’s performance. After performing my Alexander technique routine, for approximately 30 minutes, I felt much more relaxed. My palms were still sweaty and
my mouth was still slightly dry, but the shaking had subsided in my hands and fingers and I felt the most mentally focus. I had lost the tension in my tongue and the back of my neck and felt very comfortable when taking the stage. I did not feel at my absolute calm physically due to the sweating and dry mouth, but I did feel as focused as I could be mentally to perform. I was not distracted by any noises made in the audience or by any negative thoughts in my mind. I purely was thinking about the music in front of me, and the output from my instrument.

Rating of anxiety right before taking the stage: 4 out of 10

**Playing Assessment:**

When listening back to this performance, I notice very few cracks on the front of the many articulated notes. From listening to the professional recordings I was able to pick up within the sound that there was an extra played note between the leaps of A and C in the middle of the piece before the “agitato” section. The lower register spoke extremely clearly and there was a smoothness of phrasing between long passages. I am very pleased with the tone of the instrument during the performance and the tapering of phrases was very well done. I maintained a light articulation without laboring too much on particular notes or phrases where the dynamics would either crescendo or decrescendo. Jumps made to higher and lower registers where clean without loss of breath control. I was extremely pleased with this recording and performance and it is one that I would use for professional endeavors.
**Graph Assessment:**

The EMG of this particular performance was very interesting to compare to the first performance. Not only were the two sides, both right and left, closer together in levels of tension but also the distance between forearm extensor and back tension was also reduced. They maintained a close relationship throughout the entire performance, with exception to a couple spikes, and for the most part rose and fell in tandem. The starting levels for the EMG were much lower for this performance and in general the graph also dropped at the end of the piece. In comparison to the first performance, it was more natural lowering the tension before the beginning for the starting levels than in the first performance, where I had difficulty bringing it down for more than a couple seconds. I felt that between the two sides there were many more dips in this performance balancing out the rises of the tension. The left side overall was similar to the first performance if not slightly more tense in my back at certain points. This could have been because of the tension from light tonguing resulting in contracting that region. I do see a drastic improvement however in the tension of the right side of my body. There were very consistent dips with peaks and it maintained a much lower average than the first performance.
Thesis Performance #3

For my third thesis performance, I played the second movement of Camille Saint-Saëns’s Sonata for solo oboe. I used this performance as my testing of performance anxiety with the use of the Feldenkrais Method. My routine for this particular technique consisted of doing the exercises Lizard Spine (approximately 10 minutes), Spot over Hand (approximately 15 minutes), and Jellyfish Hands (approximately 10 minutes).

Performers Reactions:

Before the performance I felt very dry in my mouth and my heart rate was up. I could feel my internal temperature rising steadily throughout the day because of my anxiety. The day prior to this performance I discovered a jammed key on my instrument resulting in complications of playing certain passages. Because of this, my instrument had to be taken into a professional and I was to be playing on Dr. Fiala’s back-up instrument. Playing on a different instrument is very difficult as there are foreign pitch tendencies on particular notes and an overall kinesthetic difference of the tension and location of the keys. Because of this I was extra nervous having only practiced on that instrument for roughly twenty-four hours. Around the noon hour the day of the performance, Dr. Fiala and I realized that the Glidden Recital Hall had been double booked with another performance. This caused me to have to reschedule in a different room within Glidden Hall and gave me less equipment preparation time.
With all of this added stress, we decided to switch the musical selection I would be playing that day. Instead of performing the third movement of Saint-Saëns’ Sonata for solo oboe I would be playing the second movement. This movement I am slightly more comfortable with, but I still felt as nervous as I was during the prior two performances with the added stress of the complications.

When completing the Feldenkrais Method routine, I quickly felt my nervousness ease. I felt a calm sensation through my arms and legs but more importantly down my back. I felt my hips align with the rest of my pelvis and I felt extremely grounded in my feet when standing to play. I felt freeness in my breath and a strong air support through all of my octave leaps and slurred passages. I also found ease in my upper register as I played longer phrases within the “ad libitum” sections of the movement. My fingers felt free to move and I felt no constriction from my wrists into my pinky fingers. My mind would very subtly shift focus every now and then but overall, I felt very happy and can remember smiling and really enjoying myself while I was playing.

Rating of anxiety right before taking the stage: 3 out of 10

**Playing Assessment:**

When listening back to my performance, I first notice the sharpness on the opening note. This was quickly fixed by the adjustment of my embouchure and demonstrated my ability to recover swiftly from performance error signifying my high level of mental focus. The breath control during this performance was great as I had
clean, expressive passages with large leaps between notes and the use of the extremes of the oboe’s register. The tapers at the end of notes were very clean and exhibited good breathing. Many of the technical passages were accomplished precisely. There was only one that rushed rhythmically. The moments of high register and low register playing had a nice tone and no cracking at the front of the notes. There was one moment of intonation trouble in the upper register during a crescendo where the note is pushed to a forte. This was not as controlled as it needed to be. The performance was overall well done and showed both the technique and expressive playing necessary.

**Graph Assessment:**

The graph of this performance was very similar to that of the second performance. The right side was slightly higher than that of the left but the difference between levels was not as great as it was in the first baseline anxiety performance. The individual lines on both the right and left again peaked and dipped in tandem however they were separated as the extensor muscles were slightly tenser than those of the trapezius muscles. This performance hit the lowest peak yet for both the right and left side. At moments the graph dipped so low that it seemed to be in the starting “at rest” position. This was a perfect comparison of the graph between slow lyrical passages and faster more technical passages because this piece of music exhibits both of those things. The slower lyrical sections naturally held a lower graph in comparison to the
more technical passages. Despite this the peak to dip ratio was much more equal than in other performances.
Thesis Performance #4

For my final thesis performance, I played the first movement of Antonio Vivaldi’s Concerto in A Minor for solo oboe. I used this performance as my recording testing my performance anxiety with the use of Hatha Yoga. I did poses such as cat, cow, triangle, downward dog, savasana, and tadasana throughout the thirty minute time span.

**Performer Reactions:**

Before the performance I felt very jittery and unfocused. I found myself feeling restless throughout the classes during the day in anticipation for the performance that evening. After I performed my yoga routine, I felt extremely physically relaxed. My arms were loose and my lower back was free from all tension. My mind however felt rather unfocused. I felt extremely sleepy and was continually yawning up until the performance. I can remember feeling completely “out of body” during the performance. I had a moment of concentration failure when I neglected to come in on time after a series of rests in he music. I was not mentally focused. I had no embouchure pain or endurance problems however. The usual adrenaline rush that is received before a performance was non-existent and instead I was completely at ease. This was great for my physical well being, but I believe that was what caused my lack of mental preparedness. During the performance I felt as if I was rushing through
many of the technical passages when looking back, I was actually dragging at a much slower tempo. My physical being felt as relaxed as ever yet my mind was elsewhere.

Rating of anxiety right before taking the stage: 5 out of 10

**Playing Assessment:**

When listening back to this performance, there were few moments of finger technique error, however the tempo began much slower than intended. It felt as if I was struggling to keep up and as if I felt lethargic from playing. The technique was clean and the tone was clear which was positive because I had less time to prepare this piece as opposed to the others. The lyrical line felt long and expressive despite the slower tempo and lethargic feeling. The pitch did not remain steady throughout the performance. Many times it would fall flat in the lower register and rise sharp in the upper register. This occurred especially during moments of large slurs. Overall the technical passages were clean and steady and there was evidence of some musicality.

**Graph Assessment:**

This graph was one that was extremely interesting to compare to the others. This two graphs on both the right and left were higher than the prior two performances but it was still more relaxed than first baseline anxiety performance. The peaks and dips were at a more rapid rate than the first performance but the individual peaks rose to a very high level, particularly on the left side. The left side that was typically much
lower in the previous performances rose to the highest point ever during this piece. The peaks would drop down eventually but it was interesting to see how high they were this day. There were large drops exhibited in the tension during the breathing sections of the pieces. There was one interesting technical passage in this piece where the graph climbed higher in both the extensor muscles and the trapezius muscles as the pitches rose. It was surprising to see that the EMG levels did not rise as I recovered from incorrectly entering from the rests and missed the entrance. The performance was overall well done despite the false entrance and slow tempo. There was synchronization at the end between the levels and I think the technique was helpful but the mental focus was not present.
Professor Reactions:

Thesis Performance #1

Dr. Fiala’s Comments:

Recording: “Vibrato is too fast, sounds too high and nervous. There was some low register difficulty. Accuracy is good. There is still some finger tension causing unevenness in the finger technique. Your performance has improved so much during this project that the difficulty is going to be that all the work you have done already improves all of your playing and it’s hard to separate. The good news is that you are proving that all of the techniques are effective.”

Thesis Performance #2

Dr. Fiala’s Comments:

Recording: “There was a confident sound, good articulation. You are blowing through the phrases well. There are still some low register issues. Vibrato is more controlled than first performance. Good solid playing in high register and good tone color contrast. Fingers are even.”

Video: “Your readings came down to the bottom of the graph when you were standing there preparing to play. Your right side still shows more activation than the left but when you have rests, both sides drop dramatically, showing that you are able to release
after engaging your muscles in playing. It is good that there are lots of valleys where you release your muscles after they have been activated in use.”

**Thesis Performance #3**

**Dr. Fiala’s Comments:**

**Recording:** “This one I was amazed with what you did after having a very stressful pre-concert time (last-minute venue change, delays, new oboe, equipment difficulties, etc.). You played a very expressive opening – lyrical and haunting, as it should be. Fingers are mostly even. You still have a slight tendency to get a little behind the beat in fast passages – that has improved a lot the past few years. Good sound throughout the registers. Always a little low-register struggling but seems better. Intonation was good. I had the sense that you were relaxed enough to make your musical shapings.”

**Video:** “You were again quite relaxed in your “baseline” (before you played). Your right forearm is a little higher overall than in the last performance, but it does come down whenever you have rests. The left side has really good “valleys” where one can see that any muscle activation is released when it is not needed. The right side increases a little over time but not nearly as much as it did in the control performance. Not until you stop playing does your right side come down to the level where it was during the rests in performance #2.”
Thesis Performance #4

Dr. Fiala’s Comments:

Recording: “The performance is good. This is a difficult work that you have not had all that long to prepare and you presented it very well. It slightly lacks energy, though. Not just tempo (I would like it a little faster), but inflection and drive are slightly lacking. Good job with all of the fast technical passages, those were clean. There was one mental slip on an entrance.”

Video: “Before you start playing, the levels are quite low. It is significant that when you start playing there is a lot more activation on the left side. In the video I can’t tell if the line is blue or red but I am guessing that it is your shoulder because I see it moving a lot. All of the activity is released frequently, but is more activity than is useful for the music? Your right side looks similar to videos one and two but the left is increasingly active. Nevertheless, you are not holding the tension in your left and it is released when you have rests, which is a big improvement from the control performance.”
Audience Reactions:

Thesis Performance #1

- “Seemed nervous…played well- nerves didn’t seem to affect your playing.”
- “You definitely appeared nervous when you began and that did not seem to decrease as you played. You played well though, despite the anxiety!”
- “I think you seemed pretty nervous this time. You sounded great. I’m excited to see how the next performances go!”
- “I noticed that all levels went down when you breathed in order to prepare for the next phrase and tended to go up as you reached the ends of long phrases (perhaps from being out of breath?).”
- “Cute recording! Your sound was very dark and resonant today. There were a few problems with note beginnings and endings, with a few little cracks and burps. High notes were a little thin but still good. You didn’t appear nervous, although the graphs behind you were all over the place. I know that these are normally steadier.”

Thesis Performance #2

- “There was an obvious drop in tension as you relaxed before you played. No tension measurement line got above halfway up.”
- “You look less nervous at this performance as opposed to the first one earlier this week. I also hear a difference in your sound. You sound less strained and anxious. Good performance as always!”
• “First of all, you play beautifully. Next, I could tell that the opening and closing of the piece, when the audience was clapping, were the parts when you seemed tenser, at least in body language. It was very cool to see, graphically, which points you were pressing the keys or holding the oboe with the one arm. Good luck!”

• “You still have a great sound; it’s come a long way this past year. Even though I know that you were more nervous for the first performance you seemed that you were more nervous today. I felt the first performance was also more successful. You appeared to be having more fun during the first performance.”

• “You seemed much less nervous this time. You looked much more collected and ready as you entered the stage and seemed to stay that way throughout the performance.”

• “I found it interesting that your back muscles changed more than forearms at times.”

**Thesis Performance #3**

• “I think that it’s interesting that you chose to do the first two performances unaccompanied. I wonder if this made any difference in the outcome. It’s too bad there were so many difficulties. You should steal Dr. Fiala’s oboe; you sound like silk! As you started to hyperventilate a bit, your graph moved more. You were very comfortable with Wendy! You looked like you were having a lot of fun.”

• “Your movements go with the music, I love watching that from a dance perspective. You played beautifully as usual!”
• “During higher notes, shoulder would raise up. Almost an equal amount of tension from the front to the back and the right side was lower than the left.”
• “Wow! I love oboe! Your face doesn’t indicate nervousness! Not sure about your arms/back. I could’ve listened for hours.”

**Thesis Performance #4**

• “When you were relaxed at the start and breathing, the peaks were low. Once you pulled the oboe up, your peaks raised. It was neat to see how even breathing can calm you a bit. I came to all performances and it was neat to see how you changed over every performance. This was such a cool idea for your thesis. It was so crazy for your third performance when you were moved to another room and used a new oboe. That must have made it harder to stay less nervous but you did a fairly good job. Even with all the nervous-making things for the third performance (without seeing all the results in a row at once) I think it was your most relaxed graph. Your fourth performance was so cool to see on the graphs because you had so many peaks correlating the amount of times your fingers moved a lot. But after the tallest peaks they did return to normal. I was really impressed with this project and I would love to see how it turns out for you.”
• “You seemed about the same as the first performance.”
• “Kristen- this is amazing! The hard work you have put into this deserves just as much if not more applause! Watching you perform in recitals and comparing it to your thesis performances- I can tell a difference not only in your stance but in your playing.
Watching the screens behind you makes me feel nervous for you as the levels change. From memory I feel like techniques two and three helped you to be the least stressed and anxious; mostly technique two but three could have been more stressful because of who was in the audience! I’m very proud of you! It was a pleasure to watch you perform and collect this data. I wish you all the best!”

- “Yay! Last one! Congrats! Wow did your levels come down when you weren’t playing; it was almost funny! That was lovely Kristen. Just as a side note, you may want to add more dynamic contrasts. I heard that they were there; they were just a bit too subtle. Congratulations!”
Thesis Performance Introduction Speech:

Hello everyone and welcome to my thesis performance. This is the [insert number here] of four miniature performances I will be giving over the next two weeks testing various physical methods of relaxation and their effects on my performance anxiety. If you read the handout provided, you will see a synopsis of the different techniques I will be using and how I am using them for my project. While I perform today, I will be hooked up to the electromyography device by Proforma Vision owned here in the School of Music. Upon completion of this video there will be a graph on the projected screen. This graph is the live monitoring of the muscle tension in my forearm extensors as well as my shoulders and back. I will not be able to see these levels while I perform, however you will be viewing my tension live while I play. After the performance, please feel free to write comments or observations on the designated space in the handout and leave them in the box outside the Recital Hall. The performance itself should last no more than 5 minutes and I ask that as an audience you participate as normal as possible simulating a typical recital environment. This means, if you have any phones or electronic devices, please turn them off or silence them at this time as this performance is being professionally recorded. I want to extend thanks to the Honors Tutorial College Dean’s Discretionary Funding and the College of Fine Arts Dean’s Undergraduate Creative Research Award for the funding of this project. I would also like to thank Dean Webster, Dr. Fiala, Professor VerNooy, Melinda Murphy and Tom Wilhelm for assistance with this thesis. Thank you all so
much for coming. I look forward to seeing you at the performances to come. And without further ado, here is [insert piece title and composer here].
Hypothesis: These three methods will improve performance and reduce symptoms of anxiety as experienced by the performer. I believe it will show improvement in my muscle tension, breathing, musical ability, and overall performance experience.

Performance Details: In order for the comfort level to be equal among the performances, four different works will be chosen that exhibit similar levels of difficulty, for example in length, technique, etc. Before and after each performance I will write in a journal about my experience, documenting several categories including my level of anxiety on a scale of 1-10 (10 being the most detrimental), anxiety symptoms, how the technique affects me physically, and how the technique affects me mentally.

Data Includes: Readings with electromyography technology, recordings of public performances, professor feedback, and my own experiences.

Electromyography: For my thesis I will be using electromyography technology (EMG) to gauge the progress that the physical techniques have on my performance anxiety. The software used will be the ProformaVision EMG device that the Ohio University School of Music attained this fall. This technology measures muscular tension by analyzing when the muscles contract and release in response to stimulus. The device can my used to observe muscle tension in the neck, shoulders, hands, fingers, arms, and other areas typically tensed during performance.
**The Feldenkrais Method:**

The Feldenkrais Method is one very similar to that of Alexander Technique. It is also studied in private lessons with a guide or teacher where regular, everyday movements are observed. The difference between the two is in the physical exercises. Alexander Technique involves assessing habitual patterns physically in everyday life and working to align the body so that it responds healthily to stress stimulus. Feldenkrais Method uses slow and tedious exercises, primarily on the floor, to completely reprogram the central nervous system and the muscular effort put forth when put into stressful situations. Within the exercises, you are constantly making awareness of the body’s movement however, you are not aware of the central nervous system’s reprogramming. It is less of an alignment awareness based method for handling bodily tension.

**Hatha Yoga:** The art of yoga has been a method of physical centering for centuries, beginning in the Northern Indian culture several thousand years ago. Yoga is primarily a tool to control the stress response system. “Yoga has a sly, clever way of short-circuiting the mental patterns that cause anxiety,” says Dr. Baxter Bell, renowned yoga instructor. It is a system of breathing exercises and physical poses working to guide your mind and body to act together as a unified whole in order to relieve stress and promote balance. This is extremely valuable for performance anxiety because of the physical stress relief. When suffering from rapid breathing or constant shaking, by practicing yoga, you can reduce the physical strain on the body and focus the breathing, reducing the risk for hyperventilation.

**Alexander Technique:** Alexander Technique is the method of changing everyday movements and habits to facilitate the relief of unnecessary tensions within the body. It is usually studied in private lessons where a guide or teacher can observe your regular movements, whether walking around a room, or performing on your instrument. It is intended to help ease everyday activities with improved coordination. The guide provides feedback for the students on where they could be unnecessarily tensing muscles and wasting bodily energy. Having the control and self-awareness to correct habitual patterns in order to facilitate the release of wasted energy through unwanted muscle tensions is incredible training and can be a major asset to players suffering from performance anxiety. Exercises and analysis of movement are done during performance activity to find where tension lies and how you can alter your body to find ideal alignment.