BRAHMS, SCHUMANN, AND FOCAL DYSTONIA:

A Lecture-Recital featuring Romantic Chamber Music

by

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My thesis for the Clark Honors College will consist of a graduation lecture-recital and this critical introduction documents my preparation for it. It contains the plans I have originally made for my lecture-recital, descriptions of situations that have occurred, and my decisions based on those situations that have resulted in my final project. Included is a history and description of the pieces that I had planned to play and the common challenges that musicians encounter while preparing to perform them. I have also included my research on Focal Dystonia in musicians and how famous musicians throughout history have dealt with it leading up to modern treatments for the condition. Finally, I have included my personal journey in dealing with Focal Dystonia, starting from the onset of the condition leading all the way up to my current use of Botox treatments.

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I. Introduction

When a music student gives a senior or graduation recital, that recital is usually a culmination of everything the student has learned during his or her time. At such a recital the performer is often expected to perform works from different eras to show their knowledge of the different playing styles of each, and demonstrate their versatility as a musician. At the School of Music and Dance, this is required of students wishing to get a degree in Music Performance. However since the onset of Focal Dystonia at the end of my sophomore year, I have had to drop out of the Violin Performance program since I had to take a year off of orchestra and was unable give a junior recital. As a result, I am now getting a Bachelor of Science in General Music, but this also means that I have more flexibility in choosing what I want to do for my final recital.

At the beginning of the school year, I originally intended to have the full program of my graduation recital serve as my Honors College thesis. I had planned that my critical introduction would complement the recital, and consist of the history of the pieces I planned to perform, a musical analysis of each piece, comments on certain problems each piece presented to performers, and what pedagogical techniques I used to solve them as I prepared for the performance. I had also planned on playing violin in one piece and viola in another, therefore a section on how to approach the differences and similarities of each instrument would have been included. At the end of the critical introduction, I wanted to describe my journey in dealing with a medical condition known as Focal Dystonia, and how I approached learning each piece while still dealing with this condition.

As my recital date drew nearer, I became aware that even with the effective Botox treatment that I received, I was not yet in a state where I would be able play though a full recital. Knowing that it would be safest for me to drop one of the pieces on the program, I changed the first half of the program to a lecture on the analysis and history of Schumann Piano Quintet, and the occurrence of Focal Dystonia in famous musicians throughout history and how treatment has evolved over time. Schumann was thought to have had Focal Dystonia, and it is believed the extreme treatments that he attempted contributed to his no longer being able to perform at a high level.

I have chosen to keep the section describing my thought process while I was still planning on playing a full recital because this thought process is an important part of being a musician, as it involves consideration of the type of recital the musician wants to give and the audience that the musician will be playing for.

Selection of Repertoire:

A professional recital can consist of a broad selection of repertoire or it can follow a certain theme, and it is the latter that I wish to present on my graduation recital. During my time at the University of Oregon I have worked on pieces from different musical eras. In my sophomore year I gave a non-degree full recital, programming Bach's Brandenburg Concerto No. 4 BWV 1049, Mozart's Violin Sonata No. 21 K. 304, and Beethoven's String Quartet Op. 95 "Serioso." This allowed me to present a work from the Baroque, Classical, and Romantic eras respectively.

Even though I enjoy my work on music of different types from all eras, my favorite kind of music to study and perform is the repertoire of Romantic era

composers, specifically their chamber music works. I chose to have a program of Romantic chamber music for my graduation recital because it demonstrates how much I have grown as a musician in my time here. In Romantic chamber music, each instrument flows in and out of the spotlight, creating a seamless melody that can sometimes last for minutes. Because of the high technical difficulty required to perform these works combined with the subtle changes of pacing and fluidity of tempi, it takes a group of technically proficient and very musically sensitive and communicative musicians to convincingly perform Romantic chamber music. During my high school years I worked a lot on solo and orchestral repertoire from the Baroque and Classical eras, but it wasn't until my collegiate studies that I started to work on Romantic repertoire and began to focus on chamber music. In essence, my graduation recital will demonstrate my knowledge and proficiency of a certain type and style of music that I was introduced to and studied intensively while I was a student at the University of Oregon.

Programming a Recital:

When choosing my recital repertoire, I originally decided that I wanted to do one of the Brahms Violin Sonatas and another piece for a larger group in which I would play viola. In high school I was introduced to the three Sonatas for Piano and Violin by Brahms, and while they are three very different pieces, each of them is a very important staple in the violin repertoire. The first sonata is considered the most melodic, and the famous pianist William Murdoch wrote of the piece that "the term *cantabile* might very

well describe the whole work, for every melody seems to 'sing.'"[1] The third sonata is the most virtuosic, and many up-and-coming violinists use it as their sonata for international competitions. For example, of the 12 Laureates of the 2012 Queen Elisabeth Competition, three of them chose to play the third Brahms sonata as their sonata in the final round.[2] The second sonata doesn't have the same melodic quality of the first sonata or the virtuosity of the third sonata, subsequently it is the least popular of the three. However, since it combines melody and virtuosity in such an eloquent way, I chose the Brahms Sonata No. 2 in A Major for Piano and Violin, Op. 100 as the piece for the first half of my program.

For the second half of the program, I chose the Schumann Piano Quintet in E-flat Major, Op. 44. The instrumentation is a string quartet (two violins, viola, and cello) and piano. I had originally intended to play the Schubert String Quintet in C Major D. 956, but finding the instrumentalists needed for it was problematic, I decided on the Schumann Quintet. I was drawn to the idea of having a piano quintet on my program because it's a type of ensemble that I have little experience in and would like to work more in depth. Also, Schumann is a composer whose music I haven't studied much in college, and I would like to learn more about him and the pieces that he wrote. His *Piano Quintet* is one of his most famous compositions and a pillar in the piano quintet repertoire, so by learning it I'll be able to learn more about him and the genre.

I chose to play viola in the larger ensemble piece because I really like the role the viola plays in an ensemble. In a violin sonata, the violin and piano play a duet in

[1] William Murdoch, *Brahms* (New York: Sears Publishing Company, 1933), 310.

[2] Queen Elisabeth Competition, accessed November 4, 2013, http://www.qeimc.be/.

which each part alternates between solo line and accompaniment. Players in a larger ensemble have the opportunity to take part in a greater number and variety of musical roles. In its simplest description, an instrument can either be an upper voice that usually plays the melody, a bass voice that supplies a stable foundation that the other instruments play upon, or a middle voice that provides harmony to the main line or gives a rhythmic underscoring that drives the piece along. In Romantic chamber music, the viola consistently alternates between all three roles throughout the piece. For example, during my junior year I played the first viola part in the Brahms String Sextet in B-flat Major, Op. 18. In the beginning of the first movement, the first viola performs a middle voice accompaniment to the first cello, but then switches to a melodic role when it doubles the first violin playing the melody. Later, in the second theme of the recapitulation, the first viola takes a bass role. In the Schumann Quintet, the viola plays a similar role, and in the second movement the viola gets to be featured in the famous "funeral march."

II. Brahms Sonata for Piano and Violin No. 2 in A Major, Op. 100

Although I was unable to perform the Brahms at my recital, I include my research for archival use and look forward to completing my project in its original concept.

History and Description:

Brahms wrote his second violin sonata in the summer of 1886 during which the composer was on vacation in Thun. In addition to this piece, while he was on vacation

Brahms wrote other chamber music pieces, such as the Sonata for Piano and Cello No. 2 in F Major, Op. 99, and the Piano Trio No. 3 in C minor, Op. 101. These three pieces reflect how happy Brahms was during this summer and this is especially apparent in his violin sonata.[3] This can be shown in the tempo marking that opens the work. He includes the word *amabile*, which in Italian means "sweet, or gentle." This is reflected throughout the piece, and caused Elizabeth von Herzogenberg, a former piano student of Brahms, to describe the piece as "one caress."[4]

Unlike the other two violin sonatas by Brahms, in which the violin starts off by playing a complete melody, the second sonata begins with the piano playing a melody, and only part of it. The piano plays the first half of a phrase and the violin echoes its last measure, extending it and lending it a poignancy not found in the other two sonatas. Both instruments switch places in which the piano answers the violin. In fact, the only time either instrument is able to play a complete phrase comes 50 measures later when the piano introduces the entire second theme.

The second movement of the sonata is actually two separate movements that have been combined into one. The *andante* sections represent what would be the slow movement of this sonata, while the *vivace* passages represent what would be the *scherzando*-like movement. By switching between the different tempo and character markings and by contrasting them against one another, Brahms is able to make what would have been a four-movement work, a three-movement work.

[3] William Murdoch, *Brahms* (New York: Sears Publishing Company, 1933), 313-314.

[4] Ibid., 314.

The final movement is in strict *rondo* form, and unlike the first movement the violin completely states the theme and remains dominant throughout most of the movement. The famous violinist Kyung Wha Chung, describes the A major sonata and this movement as "The happiest of all…the third movement is just divine!"[5]

Challenges:

The challenges I expect to face in bringing Brahms' music to a successful performance are twofold: first, there are unique technical demands he places on a string player. Brahms was not a violinist, so while his phrases are beautiful, much of his music is awkward to play on a violin. Also, in dealing with slurs he tends to use them to indicate phrases rather than how he wants the violinist to bow a certain passage: there are many passages of Brahms in which the slur is written over many measures, and it would be impossible for a violinist to play all of it on one bow. Most scholars and performers agree that these are long arching phrase markings that are impractical to be interpreted as a slur and executed as such. It would be as if a singer were asked to sing for minutes on end without taking a breath. Finding a feasible bowing without distorting Brahms' musical message is a challenge all musicians face when studying his music, but especially so when one is coping with Focal Dystonia. Secondly, the flow of the music is contingent on the communication between the violinist and the pianist. To achieve this, my pianist and I will need to agree on musical ideas. Then we will work on breathing and cueing so that we present them in a coordinated way.

[5] Edith Eisler et al., *Violin Virtuosos* (San Anselmo: String Letter Publishing, 2000), 117.

III. Schumann Piano Quintet in E-flat Major, Op. 44

History and Description:

Schumann wrote his piano quintet near the end of 1842, the same year he wrote his Op. 41 string quartets, along with his Piano Quartet in E-flat Major, Op. 47, and his Phantasiestücke, Op. 88 for piano trio. He was particularly proud of his piano quintet and piano quartet, and in a letter he wrote to fellow composer Johannes Verhulst in 1943, he writes "Parts of my quintet and quartet will appeal to you, for they have life in them. I have not yet heard the trio, which is different, more subdued in character."[6] The piano quintet is a work in four movements, and throughout much of the piece the string quartet acts as its own entity, the four instruments banding together to match the volume and range of the piano.

The first movement has the term *brillante* in its tempo marking, which when translated from Italian means "bright" or "sparkling." This could be a reference to the half note motif that is prevalent throughout the movement that gives one the feeling of listening to bells ringing in different parts of the city. The second theme of this movement is a very beautiful duet between the viola and cello that includes a first violin obbligato part when the duet is repeated.

The second movement is a seven-part *rondo* that has a funeral march main theme that alternates with *episodes* of ethereal duets between the first violin and the cello and an aggressive theme played by the piano. This movement is extraordinary in that this is a slow *rondo* with a funeral march as the main theme. *Rondos* are a form that

[6] Karl Storck, ed., *The Letters of Robert Schumann*, trans. Hannah Bryant (New York: Arno Press, 1979), 244.

are usually reserved for bright, happy last movements. The viola has a very famous solo in the middle which restates the *rondo* theme in a much more powerful way that combines it with the aggressive piano theme. The transition to the second *episode* (mm. 85-89) references a transition used in the first movement (mm. 118-122). The piano plays the same part as it did in the first movement, but in a different key.

The third movement is a *scherzo* that is unusual in that includes two *trios*, each with very different characters. *Trio I* is a lyrical *canon* between the first violin and the viola, while *Trio II* is in constant sixteenth notes with heavy, offset accents. The piano part of this movement is notoriously difficult; for example, in certain parts of the *Scherzo* sections the pianist must play fast scales in octaves with one hand.

The fourth movement starts off with a Hungarian theme that is first stated in the piano. Halfway through the piece, the Hungarian theme is presented in a *fugue* and it is contrasted with a *countermelody* taken from *Trio II* in the third movement. At the end of the movement, the Hungarian theme returns and is combined with the bell motif from the first movement and all five instruments play both themes in a *double fugue*. In a letter to Carl Kossmaly, Schumann states that Kossmaly "will probably not need to be told that Bach…influenced me more than anyone in former times."[7] Schumann's choice to add a *fugue* at the end of the piece is no doubt a tribute to the master. Schumann could have been taking a risk by doing this; in the Baroque era, the fugue was a staple form of composition, but by the Romantic era, it was considered "old fashioned."

[7] Ibid., 243.

Clara Motif:

Robert Schumann loved his wife, Clara, and he revealed this in his music. At their home, he would sing her name as a falling fifth because of the five letters in her name.[8] This "Clara motif" is present throughout much of Schumann's works and is a central theme in his Piano Quintet.

The first place that this appears is in the duet that the viola and the cello play in first movement. The cello line drops a fifth with the viola entering two measures later with a rising fifth. They repeat this exchange and the entire section can be seen as Robert and Clara having a conversation.

The Clara motif is present in the *rondo* theme in the second movement, but in such a subdued, haunting version that although the writing is sparse, it is the easiest to miss, in my opinion. As mentioned before, the viola represents this motif later in the movement in a more dramatic, aggressive setting, and with the first violin both instruments play in unison to close the movement.

The third movement has the Clara motif in both of its *trios*. In *Trio I*, the fist violin and the viola play a falling fifths melody in canon. Like the duet in the first movement, this section can be seen as a conversation between Robert and Clara. In *Trio II*, the theme is present in the lowest notes of the left hand of the piano. This *trio* is a repetition of four *chords*, and the *roots* of those *chords* make a pair of falling fifths.

The Clara motif appears in the main melody of the fourth movement. First stated

[8] Marin Alsop, writer, "Robert Schumann: Music Amid The Madness," NPR, June 20, 2008, accessed May 2, 2014, http://www.npr.org/2008/06/20/91707206/robert-schumann-music-amid-the-madness.

by the piano, the melody outlines a short sequence of falling fifths. The viola joins in after the first statement, and then both instruments play the melody in unison.

Ensemble Challenges:

I will face different challenges playing in a large chamber group. In addition to a more complicated ensemble, there are also issues with balance of sound (hierarchy of voices). Since the viola is lower in register than the violin, it has more difficulty projecting. Included in the equation is that the violist traditionally sits on stage right, which results in the instrument projecting towards the back of the hall. The sound bounces off the back wall to reach the audience, resulting in a reflected sound that is delayed and more distant sounding.

Viola vs. the violin:

It is a common misconception that playing the viola is exactly the same as playing the violin, though it is easy to see why one would originally think this. Both the violin and the viola are held on the left shoulder and the right arm uses the bow to make a sound. However, a viola is much bigger than a violin, and therefore different muscles must be used to hold the instrument and to play it if one wants to play it at a professional level. William Primrose, one of the most famous violists of the 20th century, wrote: “That in some cases this autonomy is not properly appreciated is disclosed by the number of violinists today who appear to believe that all they have to do is to possess themselves and viola, and play away on it to their heart’s

content…denying it (the viola, that is) its uniqueness, its quiddity."[9] A viola is bigger and heavier than a violin, so one must hold it at a lower position and change one's left hand set-up so that more support can be given to the viola. The thicker and larger strings of the viola are slower to respond than a violin's, so when playing the viola one must play just the right millisecond earlier so that the anticipated sound reaches the audiences' ears at the same time. I have been working on the study of both instruments simultaneously for the past couple of years and will continue to work on both in preparation for my recital.

IV. Focal Dystonia in Musicians

Focal Dystonia is a condition that occurs in all types of people, including musicians. The symptoms of Focal Dystonia in musicians are difficult to diagnose because they often don't show themselves until the person is doing something extremely task-specific and repetitious over a long period of time. When talking about Focal Dystonia in musicians, some doctors refer to it as Musician's Dystonia. The *Genetics Home Reference* defines Musician's Dystonia as "a form of task-specific focal dystonia characterized by muscle cramps and spasms that occur while playing a musical instrument."[10] For the rest of my paper, I shall refer to the condition as Focal Dystonia because there is no difference between it and Musician's Dystonia other than whether or not it occurs in musicians. Carl Ellenberger, MD, points out in his article "Musicians

[9] Yehudi Menuhin, William Primrose, and Denis Stevens, *Violin & Viola* (New York: Schirmer Books, 1976), 173.

[10] "Task-specific Focal Dystonia," Genetics Home Reference, December 2012, accessed November 4, 2013, http://ghr.nlm.nih.gov/condition/task-specific-focal-dystonia.

with Dytonia: Practice Makes Imperfect" that classically trained musicians tend to develop Focal Dystonia because they practice very minute and exact movements that they are expected to repeat. The brain can mix up the connections that direct these motions, causing opposing muscles to activate, giving the musician involuntary cramps or muscle spasms.[11] Anxiety and perfectionism can be two emotional factors in the development of Focal Dystonia, as once the symptoms start to occur the patient can begin to focus on the symptoms and obsess over "fixing" it. This can cause a downward spiral leading to a worsening of the condition.[12] There are a few options to treating Focal Dystonia, which include medication and Botox injections, but the most effective way to recover from Focal Dystonia is to retrain the brain, to prevent the mind from sending mixed signals to the muscles. Because Focal Dystonia is such a specific condition, oftentimes a combination of treatments yields the best results. My case is an example of this, as progress with retraining couldn't be made without the use of Botox injections.

[11] Carl Ellenberger, "Musicians with Dystonia: Practice Makes Imperfect," accessed November 4, 2013, http://musicians-focal-dystonia.com/musicians-dystonia-practice-makes-imperfect/.

[12] Hans-Christian Jabusch and Eckart Altenmüller, "Anxiety as an Aggravating Factor During Onset of Focal Dystonia in Musicians,"*Medical Problems of Performing Artists* 19 (June 2004), accessed April 22, 2014, http://www.sciandmed.com.libproxy.uoregon.edu/mppa/journalviewer.aspx?issue=1112&article=1188&action=1.

Famous Musicians with Focal Dystonia:

Statistics reveal that only 1-2% of professional musicians develop Focal Dystonia;[13] however, there are many cases of famous musicians throughout history that could have developed Focal Dystonia. Robert Schumann was thought to have had Focal Dystonia, and this is what scholars believe made him transition from a performing pianist to a full-time composer. In the early 1830's, Schumann was experiencing extreme technical difficulties during his piano studies, and this was most likely due to the decrease of his ability to use the middle finger of his right hand. His middle finger would claw up involuntarily, and to counteract this he would attempt to practice with the use of a finger-stretching device. Around this time, he composed his Toccata, Op. 7, a work based on a series of sixths that exhibits a high amount of technical virtuosity but can be played without using the middle finger of the right hand.[14]

Gary Graffman is another famous pianist that developed Focal Dystonia while he was in the midst of his career. Graffman had made his career as a performer before developing Focal Dystonia in the late 1970's and the early 1980's. He is now on faculty at the Curtis Institute of Music and some of his notable students include Lang Lang and Yuja Wang. In an article that he wrote for *Medical Problems for Performing Artists*, Graffman explains the process he went through to finding a diagnosis for his condition, and the difficulties various doctors presented. Because of the very specific nature of

[13] "The Dystonia Society," - Musician's Dystonia (also Known as Musician's Cramp), accessed April 22, 2014, http://www.dystonia.org.uk/index.php/about-dystonia/types-of-dystonia/focal-hand-dystonia/musicians-dystonia-musicians-cramp.

[14] Eckart Altenmüller, "Robert Schumann's Focal Dystonia," in *Neurological Disorders in Famous Artists* (Basel: Karger, 2005), 179, accessed April 22, 2014, http://www.karger.com/Article/PDF/85633.

Graffman's condition, many of the doctors that he saw would diagnose him with a condition that they specialized in.[15]

Peter Oundjian is a violinist who had to retire as the 1st violinist of the Tokyo String Quartet because of his development of Focal Dystonia. He has since moved into conducting and is very successful as the current conductor for the Toronto Symphony. His Focal Dystonia began appear as a locking sensation that he would feel in his left shoulder when he played. This caused him to cancel some concerts, and after a while he could no longer use vibrato without completely lowering the ring and pinky fingers of his left hand. He is currently in the process of physical retraining, and in 2012 he gave a performance of the Bach Double Violin Concerto with colleague and former teacher, Itzhak Perlman.[16]

Leon Fleisher is perhaps the most famous case of Focal Dystonia today. Fleisher was known as one of the preeminent pianists of his generation until he started to show signs of Focal Dystonia in the early 1960's, leaving the concert stage in 1965. After decades of conducting, teaching, and playing left handed repertoire (such as the Brahms transcription of the Bach Chaconne for the piano left hand), Fleisher was finally diagnosed with Focal Dystonia in 1995. In the late 1990's Fleisher experimented with early Botox treatments, and found that Botox in combination with a certain type of

[15] Gary Graffman, "Doctor, Can You Lend an Ear?," *Medical Problems of Performing Artists* 1, no. 1 (March 1986), accessed April 22, 2014.

[16] Eugenia Zukerman, "Good News Case Study No. 1: Peter Oundjian's Personal Journey," *Musical America Worldwide*, May 31, 2012, accessed May 2, 2014, https://www.musicalamerica.com/news/newsstory.cfm?storyid=27451&categoryid=7&archived=0.

massage therapy known as Rolfing allowed him to play with both hands again.[17] At age 85, Fleisher now continues his career as a performer.

V. My Journey

This section of my thesis covers my experience in dealing with Focal Dystonia, and I how I have been able to cope with it—mentally, emotionally, and physically—from the time I began to show the first signs of symptoms to the present day.

Focal Dystonia and its causes still present some mysteries to the medical community; however, there is a consensus that three main factors (that need not all be present) contribute to the disorder. A vulnerable genome, emotional stress, and continuous repetition of exact motions can lead to developing Focal Dystonia. Although I have no relatives that I know of who have Focal Dystonia, there is wide assumption that I am genetically susceptible (as yet there is no gene targeted as the cause).

The latter two factors (emotional stress and continuous repetition) are the primary two contributing factors to my condition and they are the focus of this next section. I will detail what was going through my mind and what my approach to practice was during the time when the symptoms began to manifest in an attempt to give some insight into what it could have been that led me to develop this condition. Focal Dystonia in musicians is very difficult to diagnose because it only manifests itself in the very specific motions involved in playing their instrument, and most doctors are

[17] "Leon Fleisher: 'My Life Fell Apart...'" *The Independent*, May 30, 2010, accessed April 22, 2014, http://www.independent.co.uk/arts-entertainment/music/features/leon-fleisher-my-life-fell-apart-1984408.html.

unfamiliar with the mechanics involved in musical instruments and can misdiagnose symptoms of Focal Dystonia as simply "an overuse injury." I was fortunate enough to be diagnosed within a year, but it can often take years to finally diagnose a musician with Focal Dystonia. I will go through all of the medical processes and procedures that I went through to get to my current diagnosis and what other diagnoses I was given during this process. Once I was diagnosed, I experimented with various medications and I will include them with descriptions of what they did and their effect on me. Also included is a list of physical rehabilitation exercises, some that were prescribed and some I developed myself, as well as some pedagogical approaches I have used and am currently using to retrain my body to play without symptoms. Finally, I have included a documentation of my current treatment with Botox, and how it has improved my playing thus far.

Onset:

The first symptoms of Focal Dystonia began to appear during winter break of my sophomore year of college, but I will start this narrative at the beginning of my sophomore year fall term because that is when I made substantial changes to my practice habits. Throughout most of my freshman year of college I was in a constant disagreement with my father: I wanted to be a violinist but he wanted me to get a degree in economics. After much discussion, we finally decided that I could stay at the University of Oregon if I pursued degrees in both areas. Since I decided to become a professional musicians relatively late in life, I knew it would take a lot of work to get to

a level where I could be a proficient violinist, so when I arrived at the music school at the end of the summer I decided to take a much more disciplined and meticulous approach to my practice to help raise my level of playing.

One of the biggest events for a serious music student is the yearly orchestra seating audition that they take at the beginning of the school year. When I was in high school auditioning for the all-state youth symphony, the audition decided where I sat for the whole year: in essence, 10 minutes of playing determined how good a year I was going to have in orchestra. In my freshman year of college, I was unaware that there was an orchestra audition (I had already auditioned for the school) until a few days before the audition, and since our conductor that year took the same approach as my youth symphony, I was seated in the back of the second violins for the entire year. My sophomore year being my first year as a music major, I was determined to have a better seat in the orchestra. I arrived in Oregon a couple of weeks before the term started so that the minute the audition repertoire was announced I could begin my preparation for it. Luckily for me, I had already played one of the excerpts for one of my youth symphony auditions so I had a little bit of a head start. Starting from the first day, I practiced each excerpt and at the end of the day I recorded them all to listen for rhythm and intonation. Those are the two most important factors of an orchestral audition and I was determined to get both of those aspects of my playing as accurate as I could. I even requested a lesson with my teacher the week before classes started so I could get some feedback before the audition. With all of this preparation, I was confident about my audition and thought that I had a good chance of making it into the first violin section.

I ended up being seated as the third chair of the second violins, and when I saw the seating chart on the board I was rather devastated. All of the parts of an orchestra are essential, but the trend in trend in youth symphonies and the UO symphony during my freshman year was to seat people by skill levels starting from the first violin section to the second violin section, so the people seated in the back of the first violins were considered to be at a "higher level" than the people in the front of the second violins. The one exception to this would be the section leader of the second violin, who is normally a very skilled player who has the ability to lead. So when I saw that I was the third chair of the second violins, I thought that I was not only placed at less than the 50th percentile of the violinists at the school, I was stuck there for the rest of the school year.

That mindset only lasted for a little while because after talking to my teacher about the auditions and the seat assignments, she told me that since the previous conductor of the UO symphony retired the year before, the orchestra was going in a different direction while the school searched for another conductor. Unlike previous years, the seating was done to mirror professional orchestras, where skill is dispersed from front to back of each section rather than front-loading the first violins. I had done relatively well on my audition and—unlike previous years—seats will change at several points throughout the year so I still had a chance to be promoted if I worked hard enough.

Inspiration restored, I was determined to improve my playing level as soon as possible. One of the perks of being a music major that I didn't have as a music minor is that I was able to get first picks at reserving practice rooms. Through a combination of patience and assertiveness, I was able to reserve the exact practice rooms I wanted

throughout the day. This was a very important part of my strategy because I needed the room to be "dead" enough that I would be able to hear my mistakes clearly: some of the practice rooms are as echo-y as bathrooms and anyone who plays in them sounds like Itzhak Perlman. I felt that practicing in a place like that was unproductive and that playing in a very unforgiving practice space was the best way to improve my critical ear. Mirror placement was very important to me as well, as being able to see the flaws in my playing helped me fix them faster. Because I was able to have consistent access to a productive practice space, I was able get in 4-5 hours of focused individual practice a day.

My practice schedule was formatted in this way:

1) 1 hour of practice on basic techniques (30 minutes on right hand and 30 minutes of left hand)
2) 1 hour of scale practice (barrel-throughs, Galamian Accelerations, and arpeggios)
3) 1 hour of etude practice (Kreutzer)
4) 1 hour of solo repertoire (30 minutes of Bach and 30 minutes of concerto) and if time permits,
5) 1 hour of chamber and orchestra music

On weekends when I would have more time available, I would do 6 hours of practice total and spend an hour each on Bach and on my concerto. On Mondays, Wednesdays, and Fridays I had 2.5-hour rehearsals for two different orchestras, meaning that I played violin for 9-10 hours on those days. On Tuesdays and Thursdays I had lighter ensemble schedules, but I was also in two different chamber music groups

so on those days I would be playing the violin (and viola) for 6-7 hours. I voluntarily signed up for all of these extra groups because I thought that all of the experience that I gained from them would be beneficial. I was in my second year of college and I needed to become familiar with practicing and performing different types of musical literature while I still had time at the school.

I had hoped that all of the experience I was gaining from all of my extra ensemble work and my individual practice was improving my skill level enough so that I would be promoted when the orchestra changed seating. When the seating changed after the first concert, I was demoted to the middle of the second violin section and after the second concert I was demoted to the back of the second violin section to a seat that was behind where I sat freshman year. The thought that was constantly going through my head was, "I couldn't be getting *worse*, could I?"

I didn't find out until much later that the seating rotation was decided at the beginning of the school year as wasn't determined by how "well" or "poorly" anyone was doing at the particular time of the rotation, but rather so that everyone would have an experience playing in different parts of each violin section. Only the seating for the first concert was based off of the audition and all other seating arrangements spread out the skilled players throughout each section so the orchestra would have a balanced sound.

I was still misinformed about all of this as the fall term ended. I was having a very difficult time drawing a straight bow and this was showing most prominently in my concerto, where my sound was suffering. During one my last lessons of the term, my teacher told me a story of a former student of hers who did slow bow exercises

every day for 20 minutes in front of the mirror for a whole summer and she came back with a straight bow. I was determined to get a straight bow over the month long winter break and since the other student was able to achieve one by practicing it for 20 minutes a day over three months, I would be able to achieve the same result by practicing it for an hour every day for a month.

It was also around that time when I found out that my grandmother had passed away and that I needed to go home early to attend her funeral. Music has always been a safe place for me, so in times when I have emotional stress, I find goal-oriented practice comforting. Though playing the violin is infinitely complex, practicing it is not nearly as much so. One simply has to establish an achievable goal (most commonly a specific aspect of a technique) and reinforce it through repetition. This was how I approached drawing a straight bow. I would start off doing whole bows with four metronome counts at 60 beats per minute (bpm), and after doing it sufficiently on all four strings, I would move the metronome down 2 bpm and begin the process over again. After I reached the slowest speed on my metronome (30 bpm), I would start at 60 bpm again and this time work my way up to a faster speed (usually around 80 or 90 bpm). This would usually take about an hour or so, and I repeated this exercise daily.

Halfway through winter break, I encountered a problem with my playing I had never seen before. During my long bow exercises, after I reached the “square” in my bowstroke, my arm would stop. Regardless of how much I focused on opening my arm and moving to the tip, my arm was frozen. I had to stop street performing on Waikiki for the rest of the break, but I was eventually able to use the whole bow again if I put most of my focus on my bow arm.

As school started again and I began to prepare for my sophomore recital, my teacher and I began to notice something else about my bow arm: although my arm was no longer locking at the square, when I moved past the square on a down-bow, my right arm would twitch and there would be a small blip in the sound. I was able to hide this too, but it required even more focus on my bow arm. My sophomore recital went well, but as I was preparing for it I began to realize that it took more and more focus to prevent my arm from twitching and that sometimes it would twitch even if I had all of my focus on it. I also found that I began to fatigue more easily and that 4-5 hour practice sessions were no longer possible. I had to be smarter about how I practiced, and I had to drop most of my extra ensembles. At the end of spring term of my sophomore year I took a jury for entrance into the violin performance program. While I passed the jury, the general consensus was that if this mysterious condition in my arm were to continue, I would be unable to be a musician.

Path to a Correct Diagnosis:

At the end of my sophomore year, I had a physical therapy session with the father of one of my friends. He was a physical therapist and his daughter was a serious violinist so he was also aware of how violinists use their bodies. I had shown him what my arm was doing when I played and he told me that it might be caused by one of the nerves in my arm jumping when I do a certain motion. He had not seen anything like it before but it could be happening because a certain muscle in my back was tight. He showed my dad and me a couple of two person stretches we could do throughout the

summer. We did the stretches daily and I took serious time off from playing, but when I started again at the end of the summer there was no improvement.

At the beginning of my junior year, my mother suggested I visit the health center on the UO campus about my predicament. The tuition for attending the university was $46,000 and included in this was a “health service fee” that we interpreted to allow me full use of the campus health center. I saw the registered nurse practitioner there, and she concluded that I had tendonitis from an overuse of playing. She also did some preliminary, non-invasive nerve tests that came up negative. She suggested that I sign up for physical therapy there and ended up going to see a therapist the next day. At that session, I learned some stretches and some exercises with a foam roller that helped strengthen my shoulders. I planned on attending a physical therapy session every week, but before I could attend my next session I received a call from my parents informing me that they were receiving exorbitant bills for medical services rendered through the university. It turned out the health center’s services weren’t covered by our Hawaii insurance, therefore we had to pay most of the bills out of pocket.

Shortly afterwards, I found myself entirely without a primary care physician. My doctor in Hawaii had raised his rates to the point where my parents could no longer afford a family practitioner for basic, preventive medical care, and for my purposes, a general practitioner who would refer me to the specialists I obviously needed. I was fortunate to find a physical therapist in Eugene who could see me without a referral, and so I began a regime of stretching and strength training that did make me stronger but did nothing for the twitch.

It was at this point in time that I came to some realizations:

1) No one really knew for sure what was wrong with me, and
2) Figuring out would be an expensive process of elimination, which
3) My insurance company would not want to pay. Therefore,
4) I would need to become an expert on *myself*, and
5) It would take a team, a network of people to help me get through this.

In January of winter term of my junior year (2013), I tried to find a primary care physician in Oregon who could help me find out what was causing the twitches or perhaps even refer me to a neurologist. I called to make an appointment with one of the primary care physicians in the Oregon Medical Group, but his schedule was full for the next couple of months. The receptionist suggested that I instead make an appointment with another doctor because he had an opening the next day. When I asked if he was on my insurance, she suggested that I not worry because "all of them were on the same plan."

I went in the next day to see him and after the initial examination he suggested that I see one of his colleagues, who specialized in physical medicine and rehabilitation. Even though her schedule was full, I was able to make an appointment with her for the next day because of my doctor's recommendation. When I asked about insurance, my doctor told me that though he wasn't familiar with insurances, he knew that his colleague and himself were "on the same plan."

I went to see the specialist in physical medicine and rehabilitation, and after she saw what my arm was doing she suggested that I get an MRI on my arm to see if it had any physiological abnormalities. I got the MRI and made another appointment to see her. There were no abnormalities in my arm so she recommended a nerve conduction

test. A nerve conduction test examines the general health of neural conduction, determining how quickly an electrical impulse moves through a particular peripheral nerve. Although unpleasant, this test helped to eliminate more life-threatening diagnoses, such as Amyotrophic Later Sclerosis (ALS, or Lou Gehrig's Disease), brain tumors, Huntington's Disease, Guillain-Barré Syndrome (GBS), and Multiple Sclerosis (MS). After the nerve conduction test had been done, my doctor came back and told me something unexpected: she and the previous doctor I saw turned out to not be on my insurance plan. She felt very apologetic about the mix-up, and chose not to charge me for the nerve conduction test. There was nothing she could do about the two previous visits and the MRI, however. She referred me to a neurologist, whom she was certain was on my insurance plan. This was my first experience seeing doctors on my own and I had no idea of how insurance companies worked. The neurologist I saw did another nerve conduction test, and even though that came up negative I found out that he was also not on my insurance and my family had to pay out of pocket this as well.

It was nearing the end of the school year, and I still had no doctor and no idea of what was going on with my body. Despite having negative nerve conduction tests, I still contemplated the possibility of presenting early symptoms of a very serious neurological condition such as Lou Gehrig's disease or even multiple sclerosis, the disease that took the playing ability and later the life of the famous cellist Jacqueline du Pré. I had stopped playing violin for the whole school year, but continued to play viola in a chamber group that was preparing the Brahms sextet. I knew if I wanted to continue music in college and keep the possibility of a career, I would have to find out what I had as soon as possible.

My violin teacher, Kathryn Lucktenberg began to help me find a doctor (preferably a neurologist) that was on my insurance plan. Thanks to a very generous referral from Dr. Terry Copperman (Kathryn's primary care physician whom I visited once in during the earlier stages of my condition), I was able to get an expedited appointment with the neurologist Dr. David Lippincott. With him we were able to describe what I had as action myoclonus, an involuntary twitching of a muscle when it is moved a certain way or even the intention to move. I started taking a small dose of Levetiracetam, and returned home to Hawaii for the summer.

Once I was in Hawaii, finding a doctor was much easier since my insurance was Hawaii-based and most of the doctors were providers. Even though my Hawaii insurance was a part of a larger insurance company, it was very difficult to find a provider on the US mainland. I found a primary care physician, Dr. Peter Wai, who referred me to a neurologist, Dr. Brandon Hirota. After getting an MRI that showed that I had no physiological abnormalities around my neck, Dr. Hirota asked one of the other doctors who worked in his office to take a quick look at what was happening when I played. This doctor was a neurologist who specialized in movement disorders. After watching me play for a while he saw that it wasn't only my triceps twitching, but my biceps as well. This knowledge helped Dr. Hirota diagnose me with Focal Dystonia. After researching Focal Dystonia a bit, I discovered that much of what happened to me matched the symptoms of other musicians who've suffered from the condition. Rehabilitation was a long process, but at least now I had a diagnosis that felt true to me, and a place to start.

Medications Used:

Before finally deciding on Botox, I was prescribed various medicines used to treat Focal Dystonia and similar neurological conditions. I will list how much of each medicine I was taking, how helpful each medicine was, the common side effects for each medicine, and the side effects that I encountered during my use.

1) Carbidopa-Levodopa: This is a medicine that is normally used to treat patients with Parkinson's Disease but is also used to treat Dopamine-Responsive Dystonia, a type of Focal Dystonia commonly found in musicians. I took three 25-100mg normal tablets a day from July 2013 until January 2014, when I started taking three 25-100mg sustained release tablets a day. The difference between the sustained release tablets and the normal tablets is that the sustained release tablets keep a constant level of the drug in the body while with the normal tablets the level of the drug in the body rises when the pill is taken but lowers after six hours. Side effects consist of confusion, drowsiness, nausea, and trouble falling asleep,[18] but during my time with the drug I only experienced slight trouble concentrating. I found good results when first starting the drug, but after a few months it no longer had the desired effect.
2) Neupro® Patch: This was a patch that I used for a couple of weeks in February 2014 in conjunction with the sustained release Carbidopa-Levodopa tablets in preparation for my grad school audition. Neupro® Patches are normally used to treat Parkinson's Disease. I started taking the 2mg patch but moved up to the

[18] "Levodopa and Carbidopa: MedlinePlus Drug Information," U.S National Library of Medicine, accessed April 25, 2014, http://www.nlm.nih.gov/medlineplus/druginfo/meds/a601068.html.

4mg patch after a couple of days. Side effects include falling asleep during normal activities, hallucinations, skin site reactions, or uncontrolled movements,[19] but the only side effect that I encountered was mild itchiness at the site of the patch. I did not find this medicine helpful to my condition.

3) Gabapentin: This was a medicine that took for a couple of weeks in March 2014 before I started my Botox treatment. Gabapentin is normally used to treat patients with epilepsy. I started off with taking one 100mg tablet three times a day but moved up to taking two 100mg tablets three times a day after a week. Common side effects include drowsiness, uncontrollable shaking of a body part, and joint pain,[20] but I experienced no side effects. I did not find this medicine helpful to my condition.

Physical Exercises Used:

After I had noticed that my symptoms would worsen after I began to fatigue, I decided to do some strength training to help build my stamina. All of the exercises used were done with a blue resistance band. While some of these are common exercises, I altered some of them to make it more similar to playing the violin. These exercises have been effective for me, but that does not mean that they will work for everyone. All of the exercises were repeated on both sides to maintain balanced muscle growth.

[19] "Neupro," Neupro.com, accessed April 25, 2014, http://www.neupro.com/parkinsons-disease/neupro-side-effects.aspx.

[20] "Gabapentin: MedlinePlus Drug Information," U.S National Library of Medicine, accessed April 25, 2014, http://www.nlm.nih.gov/medlineplus/druginfo/meds/a694007.html.

Strengthening the muscles that stabilize the joints and muscle groups in use is equally important. To do this, I embarked on a regular swimming regimen.

1) Front Shoulder Raises (3 sets of 10 repetitions for each arm): These exercises are very similar to the kind of resistance band exercises that one would normally do to strengthen the anterior deltoids. In this exercise, one would secure the resistance band in a door about six inches from the ground and while facing away from the door, raise the arm holding the resistance band directly in front of them up until the point where the arm is parallel to the floor. While doing this the palm must be facing towards the ground and the arm isn't raised past the point where it is parallel to the floor. I altered this exercise slightly because violinists never hold their bow arms directly in front of them, but at a 45° angle to the right. Also, when a violinist of my height is playing at the tip of the bow, their right arm is not fully extended. This may not be the case for a shorter violinist. Regardless of size, it is important for the violinist to mimic the arm position they have when playing at the tip of the bow. In my version of this exercise, I raise my arm holding the resistance band at a 45° angle to the right, and while doing this I make sure that my right arm is extended to the point that I would normally be at if I were playing at the tip of the bow (Figure 1). The sets are then repeated with the left arm. This exercise helps raise the stamina of the muscles that hold the bow arm up, and will help me with overall stamina and with playing passages in *piano* that require less bow arm weight into the string.

Figure 1. Front Shoulder Raises

The arm is raised at a 45° angle from the body with the elbow slightly bent.

2) Arm Crossover Pulls (3 sets of 10 repetitions for each arm): This exercise is something that I developed to strengthen the muscles that help get a straight bow as I head towards the tip. When playing the violin I sometimes move my upper right arm too far to the right, resulting in a crooked bowstroke. This exercise works on the muscles that I use to "push the bow forward" as I move towards the tip. The right arm makes a right angle with the elbow and is held close to the body with the palm facing towards the stomach. The resistance band is secured to the door at elbow level and is located coming from the right side. The right arm crosses the body to the left while still keeping the forearm parallel to the ground. This motion is done as far as it is comfortable, then slowly returned to the starting position (Figure 2). The sets are then repeated with the left arm.

Figure 2. Arm Crossover Pulls

Starting position (left) and ending position (right). Forearm is kept parallel to the floor.

3) Outward Rotator Cuff Pulls (2 sets of 10 repetitions with each arm): This exercise and the Outward Rotator Cuff Pulls are the only two exercises that I did not modify. This exercise starts similarly to the Arm Crossover Pull in that the right arm makes a right angle close to the body with the palm facing towards the stomach, but in this exercise the resistance band comes from the left side instead of the right. The right angle is maintained and the right forearm swings outward and away from the torso then slowly returns to the original position (Figure 3). It is advisable not to rotate past this right angle once it is reached, and that the upper arm stays in the same place when rotating. The sets are then repeated with the other arm in a mirrored fashion.

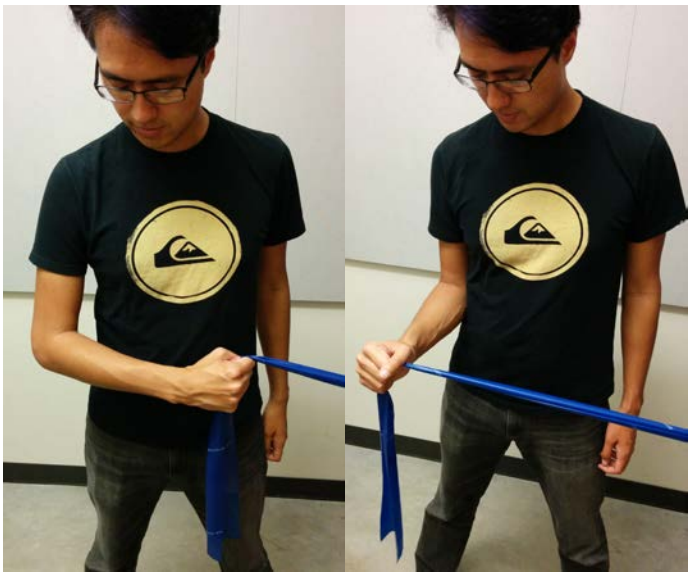

Figure 3. Outward Rotator Cuff Pulls

Starting position (left) and ending position (right). Forearm is kept parallel to the floor and the arm isn't rotated past the ending position.

4) Inward Rotator Cuff Pulls (2 sets of 10 repetitions for each arm): This exercise is very similar to the Outward Rotator Cuff Pull in that it consists of the same motions, just approached inversely. The right arm makes a right angle with the elbow, but starts off with a right angle between itself and the stomach, much like the position of the arm in the middle of the Outward Rotator Cuff Pull exercise. Unlike the previous exercise, the resistance band comes from the left and the idea of the exercise is to rotate the arm inward so that the right arm touches the stomach. Like the previous exercise, this exercise is done without changing the angle of the elbow or moving the upper arm. After this motion is done, the arm is slowly rotated back to the original position (Figure 4). The sets are then repeated with the other arm in a mirrored fashion.

Figure 4. Inward Rotator Cuff Pulls.

Starting position (right) and ending position (left). Forearm is kept parallel to the floor.

5) Down-Bow Resistance Exercise (2 sets of 10 repetitions for each arm): This is an exercise I developed in order to combat the “stuck” feeling I would get in my arm whenever I would reach “the square” in my down-bow stroke. The logic behind it is that by doing this exercise, I will be able to give my body actual resistance when doing a down-bow motion so when I actually play violin it would be “easy” to move past the square. The resistance band is attached to the door above the shoulder at a height so that the line that the band makes will be at the same angle as a bow would make when playing on the A or D string. The resistance band is positioned so that it is coming down above the left shoulder. Without the instrument, the left arm is in a position as it playing the violin and the right arm holds the resistance band as if it were a bow (Figure 5). The right arm starts where it would be when playing at the frog and then extends to the point where it would be at the tip, replicating a down-

bow stroke. The arm then slowly comes back to the original position. The sets are then repeated with the left arm.

Figure 5. Down-Bow Resistance Exercise

Violin position is imitated, with the resistance band acting as the bow.

6) Up-Bow Resistance Exercise (2 sets of 10 repetitions for each arm): I developed this exercise in order to work on my body's tendency to involuntarily shoot to the frog when doing an up-bow. My logic is that if I am able to do an up-bow motion with resistance, then I will have more control when I do an actual up-bow on the violin. The resistance band—held in the right hand—is placed so that it comes from the lower right hand side, and is attached to the door at a point so the line that it makes would be the same angle as a bow would be when playing on the D or A string (Figure 6). The arm starts at the position that it would be at the tip of the bow and is slowly moved towards where it would be at the frog. The arm is then slowly returned to the original position. The sets are then repeated with the left arm.

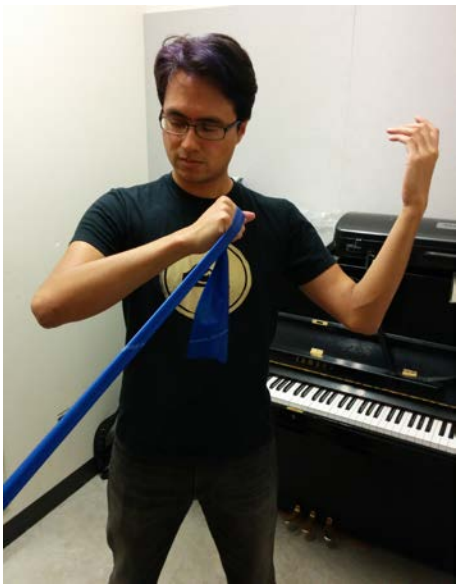

Figure 6. Up-Bow Resistance Exercise

Same as the Down-Bow Resistance Exercise except with the resistance band coming from the opposite side.

Warm-Up Routine:

At the beginning of the school year when I thought that Carbidopa-Levodopa was working enough for me to do retraining while still playing at a high level, I developed a warm-up routine that focused intensely on bow use and distribution, but also incorporated left hand exercises as well. I would time each section of this warm-up routine so that it would take exactly 30 minutes so I could rest before major fatigue set in. I also only allowed myself to work on each exercise for the specified number of minutes because if my arm started to lock up or if my right arm would start twitching, I could go off on a tangent that would sometimes last for hours to figure out "what was wrong." By establishing these time limits, I could stay focused and work on all aspects

of my technique without wasting my physical stamina on something I had already worked on. My warm up routine consisted of the following exercises:

1) Tune and free bows (2 minutes): The free bows I did after tuning my instrument let me “get used to the instrument” before I began my actual focused practice. It was also an opportunity for me to find any tension in my body caused by how I was standing or how I was holding the instrument.
2) Open strings with clips on bow, divided into four equal parts (Figure 7), metronome at 60 bpm (8 minutes): For this exercise I used mini hair clips for bow division on every subsequent exercise until the Scales with Galamian Acceleration. For the first four minutes, I would spend a minute on each string and do whole bows with four metronome counts for each bow. Since the bow was divided into fourths, it meant that I would pass a divider clip on every beat. In addition to general bow control, this helped me retain the same bow speed in all parts of the bow since I tended to have slower down-bows near the tip and faster up-bows coming back from the tip. For the final four minutes of this exercise, I would still do four metronome counts for each bow, but I would stay in the section at the tip and the section at the frog for four metronome counts each and do four bow changes. This was one of the first exercises Kathryn gave me at the beginning of my freshman year and it works on bow changes at the most uncomfortable parts of the bow: the frog the tip. As in the first half of the exercise, one minute was given to each string.

Figure 7. Bow Clips

The clips on the bow divide it into fourths.

3) *Martelé* (4 minutes): I included a *martelé* exercise in my warm up routine because it is the first bow stroke that beginning Suzuki students learn and it is important in my role as a Suzuki violin teacher. It takes a lot of control to be able to suddenly stop the bow on the string while still getting a ring from the instrument. For this exercise I would experiment with doing *martelé* strokes between different divisions of the bow, specifically the middle two because that was where my arm would most frequently twitch. Occasionally, I would experiment with zigzag bows (moving up one division and then down two divisions etc.) to work on moving between different sections of the bow with a different articulation from *legato* long bows. I would spend one minute on each string and repeat the *martelé* pattern for the day on each string.
4) Schradieck 1st exercise from Book I of *School of Violin Technics* (1 minute): This is an exercise that works solely on the dexterity of the left hand fingers in one position. I did this exercise with doing each measure on a bow so that I could line up the four metronome counts with each bow division clip. This was done only on one string per day, and the string would change each day.
5) Scales with Galamian Accelerations with metronome at 50 bpm (15 minutes): This exercise I would do with only one bow division clip located in the middle

of the bow. The Galamian Acceleration exercise is done by playing a three octave scale with a turn at the beginning and end of the scale so that there will be a total of 48 notes played. This number is very important because it is divisible by 1, 2, 3, 4, 6, 8, 12, 16, and 24 respectively. Giving each bow two metronome counts, the amount of notes played on each bow could be any of the aforementioned numbers. Regardless of how many notes are played on one bow, each metronome count will coincide with a bow change or passing the bow division clip. Galamian instructs that one starts with 1 note per bow and gradually moving up the divisions of 48 through each repetition of the scale so that the counting of subdivisions, bow division, and scale fluidity are all addressed at the same time. As this exercise incorporates all of the preceding exercises (with the exception of the *martelé*), I chose to do it last. I videotape this last exercise, going through an entire cycle of accelerations, watch it, and then go through an entire cycle again making changes to faulty technique observed in the video. I would change the scale each day, moving through the barrel-through progression as the days go by.

This warm-up routine was very helpful, but after I finished all of these exercises, my body would be too fatigued to do any more productive practice for the day. As my grad school audition and recital moved closer, I had to gradually stop doing this routine on a daily basis in favor of practicing repertoire during the time I was able to physically play the violin.

Retraining Exercises:

These are a couple of retraining exercises that I learned from one of my teachers, Kevin Lefohn. These are not exercises designed specifically for retraining violinists with Focal Dystonia, but rather for violinists of all levels to reacquaint them with how the bow-arm works at a fundamental level, and establishes control with varying bow strokes. These exercises were very helpful for me because it is only at the absolute starting point that retraining can begin.

1) Relaxing through the "danger zone:" This exercise works on both tone production and relaxing the bow-arm. The constant focus on relaxing individual muscles that this exercise requires helped me identify which muscles tensed up at certain points in the bow, and from that knowledge I am able to focus on relaxing certain muscles while I play in order to avoid my arm locking up and/or twitching. The exercise starts off with a down-bow at the frog. At the point when I feel like a muscle twitch will start to occur, I stop the bow and focus on relaxing all of the muscles in my bow arm, specifically the pectoralis major, the brachioradialis, and the biceps. While doing this I am simultaneously compressing all of what Galamian refers to as "springs." The bow arm, the violin, and the bow create a "system of springs" that compress and extend to create a fluid bow arm and a good tone. By compressing all of the springs, the arm is totally relaxed and all of the weight of the arm is put into the string. From this starting point, I can figure out which springs and muscles are necessary to have a balanced bow arm. Tension occurs when there are too many unnecessary muscles being used at the same time, so by focusing on using only necessary

muscles, I can hopefully retrain my body to stop activating unnecessary ones. Ideally, I will one day no longer have to stop the bow before relaxing because I'll be able to subconsciously relax before I reach the danger zone. I found this exercise helpful, but I wasn't making enough progress with it in time for my recital.

2) Relaxation at different parts of the bow: This exercise is an extension of the earlier exercise in that it involves compressing all of the springs in the bow arm. However this exercise is meant to find the necessary springs and muscles to be used in different parts of the bow, not merely the place before the danger zone. I start of by placing the bow on the G string near the frog, relax all of the muscles in the arm and compress all of the springs, and grab the string with the bow. Like the previous exercise, I start activating only the necessary muscles and springs to get a balanced bow arm, but I do not move the bow, just make enough contact with the string to grab it. I repeat this in all parts of the bow on different strings to get a feel for the different muscles and springs engaged at different parts of the bow on different strings. Like the other exercise, I found this one very helpful but I wasn't making as much progress with these exercises alone to be sufficiently prepared to give a recital.

Botox:

As of April 7, 2014, I have begun the use of Botox to help treat my Focal Dystonia. My hope is that like Leon Fleisher, I can return to playing normally with the help of Botox injections. I also hope that with enough "correct" playing due to the

Botox, my brain will retrain itself and I would no longer need any help to continue playing with ease. The effects of Botox usually take 3-5 days to start to show and reach full effect anywhere between 3-5 weeks after the injection. I have included my journal reflecting my day-to-day observations of the Botox:

Day 1: Monday, April 7, 2014- Injected 40 Botox units into the brachioradialis and 60 Botox units into the lateral head of the triceps. The Botox immediately took effect in the brachioradialis but it will take a few days to see the effect on the lateral head of the triceps. The original plan was to inject 50 Botox units into the biceps and 50 Botox units into the triceps. However, shortly before the injection Dr. Lin noticed that it was the brachioradialis and not the biceps that was twitching so we decided to inject it first. When playing after the injection, a second head of the triceps was twitching and the biceps became tense.

Day 2: Tuesday, April 8, 2014- Playing was easier at beginning of practice, but old symptoms returned after 30 minutes of playing and fatigue set in. Must be patient for Botox to start working.

Day 3: Wednesday, April 9, 2014- Botox seems to be affecting injected muscles, playing was much freer until fatigue set in and fatigue set in much later (10-15 minutes). After fatigue set in, biceps became tense and using whole bow was difficult. However, twitches of brachioradialis was not present and twitches of lateral triceps head were slight.

Day 4: Thursday, April 10, 2014- Twitches still occur in triceps but twitches are no longer happening in the brachioradialis.

Day 5: Friday, April 11, 2014- Only played viola today for quintet rehearsal. Arm surprisingly had no twitches and only occasionally felt unstable

Day 6: Saturday, April 12, 2014- Arm was locking in the square again. After this position is locked, it is very difficult to continue the rest of the bow. A lot of bow pressure also occurs, squashing the sound.

Day 7: Sunday, April 13, 2014- Arm continues to lock at square after fatigue sets in. After this begins to happen, the right upper pectoral muscle begins to tire as well. This may be from the increased effort it takes to open the right arm after it begins to lock.

Day 8: Monday, April 14, 2014- Rest day, did not practice.

Day 9: Tuesday, April 15, 2014- Played viola during lesson and worked on spiccato. When the arm starts to lock, the elbow level becomes higher. It takes effort to move the right elbow to a lower level instead of accomplishing it with gravity.

Day 10: Wednesday, April 16, 2014- Played viola during rehearsal. Arm was locked at square so badly that the other muscles were straining trying to extend it. As it progresses, I get stuck closer and closer to the frog.

Day 11: Thursday, April 17, 2014- Rest day, did not practice.

Day 12: Friday, April 18, 2014-Played viola in quintet rehearsal, arm continues to lock in square of arm and fatigue begins to set in sooner. This could be from the possible stress of the recital being a little more than two weeks away.

Day 13: Saturday, April 19, 2014- Rest day, did not practice.

Day 14: Sunday, April 20, 2014- Rest day, did not practice.

Day 15: Monday, April 21, 2014- Performed the 4th movement of the quintet in an optional performance class. Fatigue set in early and arm began to lock up again. Constant playing near the frog during the 4th movement does not help the situation.

Day 16: Tuesday, April 22, 2014- Rest day, did not practice.

Day 17: Wednesday, April 23, 2014- Received a Botox injection of 75 Botox units in the long head of the biceps. Instead of receiving one shot of 75 units, three smaller shots of 25 units each were given in different places of the muscle. This has sometimes

proven to help the Botox spread faster. Had quintet rehearsal later that day and it is now possible to play long bows without arm locking up. This is a good sign.

Day 18: Thursday, April 24, 2014- Taught a violin lesson today and encountered no trouble. I can still feel some of the muscles twitching, but they no longer prevent me from using the whole bow. I can only assume that this will improve as the Botox starts to take effect.

Day 19: Friday, April 25, 2014- Rest day, did not practice. Turned in first draft of my thesis this morning.

Day 20: Saturday, April 26, 2014- Taught a section of violin group class today. I have to remember to lighten the weight into the string in order not to squash the sound, but I must not accomplish this by raising my shoulder or right arm level. This leads to unnecessary tension.

Day 21: Sunday, April 27, 2014- Rest day, did not practice.

Day 22: Monday, April 28, 2014- Went over the fourth movement with a colleague in the quintet who had missed some rehearsals due to an out-of-town engagement. Arm was working well throughout the 30-minute rehearsal.

Day 23: Tuesday, April 29, 2014- Rest day, did not practice.

Day 24: Wednesday, April 30, 2014- Rehearsed the fourth movement with the quintet. I was relieved that we were able to get the fourth movement to performance level in one rehearsal with everyone. My colleague was able to incorporate what I worked with her on Monday and after rehearsing and then playing through the movement a few times, all of us were able to play through it together. It helps that I have such a good group that can adjust to each other.

Day 25: Thursday, May 1, 2014- Taught violin lessons today. Switching back to violin once a week after playing viola for the rest of the week is confusing for my arm. I still can play using the whole bow, but it requires a lot more control to get a nice sound on the violin. I have to put much less weight into the string or else the sound will squash. The violin is less forgiving than the viola.

Day 26: Friday, May 2, 2014- Ran through the entire quintet today. I was having so much fun that after a while I was getting worried that I would overdo it and burn out my arm before the concert. I no longer have trouble with the arm locking, but my arm tires more easily now, especially the brachioradialis after the constant *détaché* in the first movement. Also my shoulder starts to tire from holding my arm up for such a long period of time. Since we are standing, I can no longer rest my right arm on my leg when I play soft passages, but I know when the time comes I'll be able to power through the fatigue.

Day 27: Saturday, May 3, 2014- Dress rehearsal today. Spent most of the time rehearsing the demonstration section of the lecture-recital, and therefore played for a little over an hour. Arm was working really well, but I am afraid of pushing it to exhaustion before the actual concert. We decided not to run through the whole thing in rehearsal because of this. We were able to run through it yesterday and have played individual movements in Beall before. We should be fine tomorrow. On a side note, the solo from the second movement went really well today.

Day 28: Sunday, May 4, 2014- Today was the concert. It went really well! The lecture section went smoothly and so did the performance section. The piano sections at the frog in the second movement fatigued me a little, but the adrenaline of performing carried me through the last two movements. Other than that, I was able to play without worrying about anything happening to my arm, which is something I haven't done in years. I've forgotten how fun it was to play like that. I am hopeful that one day I will be able to play like that permanently.

VI. Reflections

As I near the end of this project, I can't say much about it other than that I am happy it is almost done. Rehabilitating from Focal Dystonia is a daunting task in itself, but combining that with an important concert deadline and a thesis made it even more stressful. Regardless, I was able to learn a lot from it and I am glad that it turned out so well. I am also grateful I live in this century, when there are some treatments for Focal Dystonia, even if just for the symptoms. I have faced many obstacles in the past couple

of years, and to overcome them I've had to use a combination of quick thinking and sheer perseverance. As a result, I feel like I am a much stronger person and I can now deal with problems with a calm and clear mind. For example, five minutes before the lecture-recital was supposed to start, the stage crew and I were still trying to figure out how to use the projector and the sound system. I had written my presentation only a few days before and since my recital setup form had gotten lost, I wasn't able to see what the stage would look like completely set up, and the only time I was able to run through everything in order was during the concert. My piano quintet consisted of amazing musicians, but because of scheduling conflicts we were only able to have one full rehearsal on the last movement and two rehearsals integrating all the movements together. Despite all of this, the lecture went smoothly and we were able to give a polished performance of the Schumann Piano Quintet. All of this reminded me why I enjoy music so much, and that is because in music I can take whatever I am feeling and make it into something beautiful. I grew as a person throughout this experience, and I hope that this documentation of my research and experiences will shed some light on Focal Dystonia and be of help to others who face similar challenges.

Glossary

Barrel-throughs: A scale exercise used by Galamian students. Starts playing a three-octave G major scale followed by three-octave scales of both forms of G minor. After that, the student moves on to A-flat major, and continues the sequence going up chromatically until G major is reached again.

Canon: Music in which one part imitates another, for example singing a round of "Row Row Your Boat."

Chamber Ensemble: a non-conducted ensemble consisting of more than two people.

Détaché: Bow stroke characterized by constant bow speed and bow pressure.

Fugue: Similar to a *canon* but is far more difficult because the while there is imitation each part is distinct and the subject is developed substantially more. Sometimes a *fugue* can contain a *countermelody* that is played at the same time as the *subject* to contrast it. If there are two *subjects* that are developed simultaneously, then it is referred to as a *double fugue*.

Frog: Part at the bottom of the bow responsible for tightening the bow hair. It can be made of ebony or tortoiseshell. This is where violinists and violists hold the bow.

Legato: Bow stroke characterized by long bows with very smooth bow changes. In an ideal situation, the bow changes will not be heard.

Martelé: Bow stroke characterized by sudden starts and stops of the bow. Bow pressure can be changed to vary the articulation.

Phrase: A complete musical idea, much like a sentence.

Romantic Era (1830-1920): A reaction to the Age of Enlightenment, the Romantic Era was a movement from thinking to feeling. Unlike the Classical Era before it, which focused on form and symmetry, the Romantic Era placed importance on human emotions and nature. In art and architecture, this was represented by works that portrayed things as they were rather than portraying them in an perfect, ideal way. In music, romanticism manifested itself in composers who either expanded on the old forms of earlier eras (objective music) or disregarded form entirely (programmatic music). Emotion was given more importance, as was the idea that the performer should be glorified.

Rondo Form: A commonly used compositional form in which a theme (the "*Rondo*" theme) is repeated between "episodes" of other material.

Scherzo: Translated to “joke,” these movements are typically on the shorter side and have a dance-like quality. They are usually contrasted by their *Trio*, though there are some *Scherzo* movements that contain two *Trios*.

Square: This is the part of the bow where the violinist’s bow arm makes a right angle. It is the area of the bow where most *détaché* strokes are played.

Slur: In bowed string instrument repertoire, slurs indicate groups of notes are to be played before changing the direction of the bow.

Sonata Form: A compositional form that describes how a certain movement of a piece is organized, and is constituted of three parts: the exposition, the development, and the recapitulation. In the exposition, two (or sometimes three) themes are introduced that are experimented with in the development. The recapitulation is a restatement of the exposition material and finishes off the movement.

Tempo: How fast or slow a certain piece is played. Usually written in Italian and words that describe characters (such as *Vivace*=lively and *Andante*=walking).

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