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Applied music faculty are expected to have the skills necessary to oversee the development of young musicians upon employment. New professors, however, likely spent the majority of their musical life on the receiving end of the teaching dynamic and may find it difficult to adjust to their new position as purveyors of information. This document identifies a model that can be put in place to serve as both an educational tool for students and a pedagogical guideline for new teachers.

Very little has been written about collegiate trumpet studio models so outside sources were considered. In 2004, Leonid Arkaev and Nikolai Suchilin published *How to Create Champions: The Theory and Methodology of Creating Top-Class Gymnasts*, which outlines the model used to train the Russian women's and men's national gymnastic teams called the Integrated Preparation System. This system is comprised of six facets of preparation: technical, physical, tactical, psychological, theoretical, and functional. This text was adapted to serve as that educational and pedagogical tool.

The guiding principles of the methodology as they are printed in the reference text are outlined in Chapter III. Chapter VI serves as the adaptation of the six types of preparation utilizing the principles outlined in Chapter III. The author preserved as much of the source material as possible during the adaptation. These adaptations are vetted by popular texts whose subject matter ranges from trumpet pedagogy, performance psychology, and physiology.

The methodology was used to facilitate the preparation of an undergraduate trumpeter's recital as required by their degree program. Three examples of the methodology are demonstrated. While the usage of the principles was small-scale, they proved effective. The student earned a passing grade on the recital. Further research into this model's large-scale usage is needed to determine its efficacy.

INTEGRATED PREPARATION SYSTEM: AN ADAPTATION OF THE THEORY AND METHODOLOGY OF GYMNASTIC TRAINING OF LEONID ARKAEV AND NIKOLAI SUCHILIN FOR USE IN THE COLLEGIATE TRUMPET STUDIO

by

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Approved by

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APPROVAL PAGE

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I would like to express my deepest affection and gratitude to my parents, Kary and Karla Phelps, grandmother, Peggy Phelps, and the rest of my family for their continued support, encouragement, and patience.

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CHAPTER I

PROBLEM

Applied music faculty are expected to have the skills necessary to oversee the development of young musicians upon employment. New professors, however, likely spent the majority of their musical life on the receiving end of the teaching dynamic and may find it difficult to adjust to their new position as purveyors of information. Less experienced professors may model their new studio based on examples from universities, colleges, and conservatories that they attended. Without a comprehensive model for teaching applied music in the studio, the professor must start from scratch to develop a model that works for both the professor and the students. Teaching on a day-to-day basis without regard to long term goals and individual student needs is inadvisable. New faculty must be able to demonstrate student growth for tenure consideration and need to be able to correct any instructional issues that exist between the students and professor. There is a need for a clear system from which a studio teacher is able to assess students, establish clear instructional goals, and determine what skills the student needs to work on to achieve those goals.

In 1969, Gordon Mathie sought to develop a theoretical basis for a course of study that consisted of objectives for expressive performance and relevant learning principles rather than focusing exclusively on technical problems.[1] The conclusions of Mathie's

[1] Mathie, Gordon William. 1969. *A theoretical basis for college trumpet study*. [Ann Arbor, Mich.]: [University Microfilms]. 5-6

work were: 1) objectives in college trumpet teaching should be expressive and musical in nature, 2) expressivity can serve as a basis collegiate trumpet study, 3) principles of learning are important in college teaching and study, 4) the role of the teacher is vital to the development of the student, 5) the studio teacher can function as a synthesizer of broad areas of the music curriculum, and 6) emphasis should be placed on assigning etudes and method books that are pertinent to the student's musical development.[2] Unfortunately, Mathis' investigation did not produce a course of study based upon the relevant objectives, principles of expressive performance, and learning principles. There is still a need for an organized model for instruction in the trumpet studio.

Broadening the search for literature outside of that written for trumpet yields Holly Attar's *Seven Principles for Good Practice in Undergraduate Education to Music-Centered Instruction*. In her work, Attar applied Chickering and Gamson's *Seven Principles for Good Practice in Undergraduate Education* in an applied studio.[3] These principles encourage healthy student-faculty contact, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents and ways of learning.[4] While it is a popular model, it speaks to generalized learning and does not deal in the pedagogy of the instrument. A new professor needs a systematic way to evaluate and teach students based on the fundamentals of playing their instrument. This includes a familiarity with the repertoire and exercises available for trumpet.

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[2] Ibid. 81-83

[3] Attar, Holly L. 2010. *A handbook for collegiate studio teaching: applying the seven principles for good practice in undergraduate rducation to music-centered instruction*. Cincinnati, Ohio: University of Cincinnati

[4] "Chickering and Gamson 7 Rules for Undergraduate Education." http://citt.ufl.edu/tools/chickering-and-gamson-7-rules-for-undergraduate-education/.

One area of research that has shown potential in training musicians is that of sport science. In recent years, authors have written about the similarities between music and sport performance.[5] It is within this realm that one can find an applicable model for organizing and teaching collegiate studio. In 2004, Leonid Arkaev and Nikolai Suchilin published *How to Create Champions: The Theory and Methodology of Creating Top-Class Gymnasts*, which outlines the system used to train the Russian women's and men's national gymnastic teams. This system is called the Integrated Preparation System (IPS).[6] It is comprised of six facets of preparation: technical, physical, tactical, psychological, theoretical, and functional.[7] This system can be applied to trumpet pedagogy and studio teaching with little alteration and provides a clear framework when assessing student performance, determining performance related goals, and selecting exercises and repertoire that will help students achieve their goals. The purpose of this document is to adapt this model for use in the collegiate trumpet studio.

Background on Russian Gymnastic Tradition

The Russian gymnastics tradition has a long history dating back to the early 1880s. Moscow founded its first hall for gymnastics in 1881. By 1887, the first all-Russian gymnastics contest occurred due to the rising popularity of the sport, and in 1912 the first Russian gymnasts first competed in the Olympic Games. The USSR ended its isolation from the world gymnastics movement in 1949 when it joined the International Gymnastics Federation (FIG). The premier of the USSR gymnastics team at the 1952

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[5] Thomson, Jonathan. 2014. *Training for performance: lessons from sports psychology applied to musical training*. [Los Angeles]: University of California, Los Angeles. 1-3.
[6] Arkaev, L. I., and Nikolaĭ Georgievich Suchilin. 2004. *How to create champions: the theory and methodology of training top-class gymnasts*. (15-20) Oxford: Meter & Meyer Sport. 123-169
[7] Ibid. (73)

Olympic Games astounded the world. The USSR gymnasts won gold for the all-around and team championships for both men and women, as well as five individual events at these games. From 1952 to 1992, the Soviets won team gold medal at every Olympics except in 1984 when they boycotted the games.[8] Forty-nine of those competitors won the title of Olympic champion with some earning the title more than once. Alongside those honors, as many as 96 Russian gymnasts competed in world championships, winning a total of 133 gold medals, forty-nine of which bear the title of World Champion.

Coaches, scientists, and doctors contributed to the success of the Russian gymnasts. Senior coach Leonid Arkaev's career spanned 30 years, during which time he worked primarily with the men's team until the Soviet dissolution in the early 1990's. Arkaev then took up leadership of the Russian gymnastics program.[9] Another key figure, Nikolai Suchilin was a sports scientist, research, and coach who served as scientific advisor to Arkaev.

Researchers at the All-Russian Research Institute for Physical Culture and the Moscow and St. Petersburg Institutes of Physical Culture provided scientific and medical services to the national gymnastics teams. Russian scientists devoted considerable effort and study to gymnastics and defended more than 300 Ph.D. dissertations.[10] This dedication to the sport formed a unique national gymnastics school and preparation system.

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[8] Gymnastics HQ. 2014. "History of Gymnastics." http://gymnasticshq.com/history-of-gymnastics
[9] "Leonid Arkayev" International Gymnastics Hall of Fame. http://www.ighof.com/inductees/2011_Leonid_Arkayev.php
[10] Arkaev and Suchilin. 2004. 20.

CHAPTER II

METHODOLOGY OF THE INTEGRATED PREPARATION SYSTEM

Overview of Methodology

The years required to train a gymnast represent a complicated and dynamic system which consists of interwoven parts that function as an integral whole. In competition, the gymnast calls upon the many elements of their practice to compete successfully. The system within which the gymnasts prepares must also incorporate constituent parts that form a greater whole, thus, the Integrated Preparation System (IPS).[11] The IPS incorporates the six different elements of preparation as defined by Arkaev: technical, physical, tactical, psychological, functional, and theoretical.[12]

Arkaev utilized general systems theory, functional systems theory, and physiology of activity to develop the methodology behind the IPS.[13] The major trend of these philosophies for investigating complex phenomena is to examine a system from the end to the beginning. Archaev viewed the activity of gymnastic preparation as a functional system leading to a specific result. When crafting a regimen for a gymnast, he felt, it was crucial to start from the end (successful performance of the task at hand) and work back to the beginning (the gymnast's current state). With this information, a series of benchmarks can be set to create quantifiable goals throughout the system. This methodology can be applied to any system in which the gymnast participates. For any

[11] Ibid. (123-169)
[12] Ibid. (73)
[13] Ibid. (56-57)

skill development to take place, Arkaev insists that all actions toward furthering that development, no matter how large or small, must have a purpose. For this to be the case, the action must be preceded by an image that is understandable, attainable, and explicitly formulated. After this formulation, the action is performed and a result is produced. The image and the result are compared. If the result does not match the image, an error has occurred somewhere within the system. New tasks are assigned in hopes of limiting the difference between the image and the result. When the image and result are the same (or an acceptable gap between the two is reached), the control apparatus (coach) communicates this to the performing apparatus (gymnast). [14]

Forecasting

Coaches use a combination of intuition and scientific evidence to provide a prognosis for gymnasts for whom a coach can build and justify an effective preparation system. Forecasts can be current (day, week, month), short-term (two months to a year), middle-term (up to two years), and long-term (four years or more).[15] An adequate forecast allows for the appropriate correction of the preparation system and assists in limiting the amount of undesired consequences.

Coaches forecast gymnastic events prior to the application of any pedagogical systems. Arkaev defines the following as the concepts leading to an appropriate sports-goal prospect-forecast:

[14] Ibid. (60)
[15] Ibid. (64)

1. The necessary starting condition for setting adequate goals and tasks for long-term preparation of top-class gymnasts is an analysis of prospects and trends in gymnastics, a forecast of its state and the state of gymnasts in the future
2. The data from speculative and normative forecasts are compared and used for working out and refining techniques of gymnast preparation, including its modelling, projecting, programming, guidance and supervision
3. We need to establish strategic and tactical forecasting with a different degree of confirmation in time (i.e. to work out long-term, middle term, short-term, and current forecasts) which we need to use for working out and correcting various periods and stages of long-term preparation
4. Compulsory procedures are as follows
   - Regular 'running ahead' and 'looking into the future' through multiple forecasting, modelling and expertise in various timescales (not a single act, it is a process of constant orientation on gymnastics prospects which move on, become complicated and never stand still)
   - Regular comparison of indicators of current conditions of gymnastics with previous, expected and purposive (i.e. those conditions and parameters which we strive to achieve as a result of the preparation process in accordance with the normative sports-integrated forecast). This means comparing what is at a given moment and what was, with what will be, and finally with what should be.[16]

When beginning to forecast, the coach must assess the current state of gymnastics. This means identifying trends concerning which movements judges are consistently awarding high scores, what movements have fallen out of fashion, and how well these movements are being performed. The gymnasts themselves are also part of this analysis. Coaches should assess the athletes from the sport as a whole to determine and make predictions about where they are heading collectively. This sets up the end result for which the coach aims.

The next step requires comparing speculative and normative forecasts. A speculative forecast is a prediction of future success through the analysis of current

[16] Ibid.

observable tendencies while not accounting for pedagogical input. Normative forecasting means "defining possible paths of tackling problems arising in the preparation process with the aim of achieving a required state of the gymnast on the basis of pre-set criteria or norms."[17] Norms are determined by trends in gymnastics, data collected from previous and current athletes on the team, and the performances of competitors. When comparing these two forecasts, the data obtained helps guide the preparation process. Discrepancies indicate that a correction in the preparation system is necessary for the end goal to be achieved efficiently by the time of competition.

The third step requires developing a forecast about a gymnast's future abilities given their current state for various timescales. Plainly, this means anticipating how a gymnast will perform after a number of days, weeks, or years. This is another means for coaches to ensure that athletes are on the best and most efficient path. Lastly, coaches should be evaluating the current state of the gymnast relative to the progress made, the progress still left to make, and the progress needed to compete at an elite level. These forecasts set benchmarks for both the gymnast and the coach to better individualize instruction and practice.

Outstripping Development and Optimal Surplus

Outstripping development and optimal surplus are the backbone on which the entirety of the integrated preparation system is constructed. Outstripping development means systematically becoming more proficient at tasks as they grow in complexity. Optimal surplus is the ability to perform tasks more difficult than the ones presented in

[17] Ibid.

the competition routine. Along these same lines, Arkaev's most important methodological tenet is that paramount parameters for future competitive activity must be learned in training.[18] It is to this tenet that one applies the concepts of outstripping development and optimal surplus. Gymnasts will be more effective and productive in competition if all possible situations are rehearsed and surpassed in training sessions.

To this end, the competitive routine should not be at "ceiling level" for the gymnast's abilities.[19] In training, the gymnast should be able to perform more complex movements than in competition and have enough strength and endurance to complete the routine without becoming significantly fatigued. It is assumed that the simpler movements of the routine are mastered and the gymnast can meet the physical demands of the routine even in the event of nervousness or fatigue. Diversions can be simulated by performing the competitive exercises in training conditions that are more difficult than the competition itself. Because of this training, the gymnast should be able to readily face the diverting factors inevitably brought about by competition.[20] Confidence of performing ability is a byproduct of the gymnast's thorough preparation. Thus, for successful performance, outstripping development and optimal surplus must be applied to all constituent parts of the integrated preparation system.

Additional Concepts of the *IPS*

Alongside the main tenets, Arkaev includes other ideas that contribute to the successful implementation of the *IPS*. The first point is *individualism* which means

[18] Ibid. (65)
[19] Ibid. (66)
[20] Ibid.

considering each person's abilities when drafting, utilizing, and correcting the preparation system. This idea is implied when comparing the various forecasts, but also is paramount when considering which pedagogical advice to offer an athlete, how to best deliver that information, and which training aids to use in conjunction with normal practice. These assessments allow for a *dynamic* quality in training. Corrections needed for both the individual and the team can happen depending upon the situation. Additionally, *self-provision* states that the quality of coaches, equipment, and facilities should improve alongside the athletes.

Another minor tenet of the *IPS* is that the team should be *centralized*. This means all the athletes live and train in the same geographical place. When operating in this fashion it is vital to obtain and maintain a *healthy moral climate* in which the athletes get along, are loyal to each other, and help fellow athletes mutually. If conflicts arise, it is the job of the administration to resolve them and present a united front to the athletes. When all these tenets are in place athletes are not bound by extraneous factors and can perform their best at a moment's notice. Arkaev defines this quality as *professionalism*.[21]

[21] Ibid. (80-81)

CHAPTER III

IPS FOR THE TRUMPET STUDIO

Trumpet Pedagogy as a System

The concepts behind the IPS can be applied to trumpet pedagogy beginning with the *image*. The image is the simplest principle guiding a performer's improvement.[22] As trumpet players and teachers, an imagined sound, performance, and career path are essential in developing the forecast. From these ideas, we work backward to develop a plan of study to realize these images. For example, if an orchestral career is what a student has in mind, a successful audition is required. This, in turn, requires a set of consistent and demonstrable skills. A connection has been made between the specific desired result and present time. As teachers and performers, we move along this axis, utilizing the six types of preparation to obtain a result. For a trumpet professor to be effective, he or she must know how to provide reliable pedagogical instruction to the student as stated by Mathie.[23]

Forecasting in the Collegiate Trumpet Studio

With the imaged established, the teacher can begin to develop the necessary forecasts for the student. In accordance with the first step of *sports-goal prospect forecasting*, the professor needs to know who the major performers and teachers are and what they are doing or did to facilitate their success. *Self-provision* requires lessons,

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[22] Green, Barry, and W. Timothy Gallwey. 1986. *The inner game of music*. Garden City, N.Y.: Anchor Press/Doubleday. 60-61.
[23] Mathie. 1969. 11-12.

lesson observations, and interviews with those individuals so as to better understand trends in teaching, sound, style, and other elements of trumpet playing. The professor should have knowledge of prospective students. This is essential in developing a successful studio to better forecast musical selections in school ensembles.

When the goals are set, the programming for the constituent parts of the *IPS* can be developed. The programming starts from the simplest, and stays simple for quite a while, before moving to the more complex. The time spent solidifying simple concepts is "repaid with interest" later when moving to the super-complex.[24] For example, diligent practice time spent mastering single tonguing will allow double tonguing to have a stronger starting point and improve quicker. After a training regimen is prescribed, it is up to the student to delve into and practice it. As teachers, the most important lesson to instill is that all actions of the regimen must have purpose and be preceded by the appropriate mental image.

As the student progresses through the exercises given to him or her, the teacher has to react to any difficulties the student may have. Considering individual learning needs and addressing those needs propels them further along their path. A dogmatic and nonadaptive approach to education can only serve to frustrate some students and alienate others. This can taint the *healthy moral climate* indicated by Arkaev. It is up to the teacher to adopt, adapt, and experiment with different concepts and technological aids to help facilitate student progress.

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[24] Arkaev and Suchilin. 2004. 133.

Control and Performer Apparatus Relationship

The key difference between Olympic-training gymnasts and trumpeters seeking a career; practicing trumpet is mostly a solitary endeavor. For gymnasts, the control apparatus is the coach, who is present for a majority of the gymnast's practice time. During this time, the coach gives feedback and guides the gymnast along the *IPS*. As trumpet players, we must adapt our usage of the control apparatus. Because the control apparatus should evaluate the task without bias and the performer should be concentrating solely on the performance, audio and video recording are the only true means of recreating this relationship when the student is alone. Recording and evaluating a performance is the most efficient way forward while keeping both acts separate. Evaluating and performing simultaneously detracts from both activities.

CHAPTER IV

THE SIX PARTS OF *IPS*

Trumpet soloist Allen Vizzutti believes that "the essential elements of playing in the upper register and having good endurance are the same elements that insure a beautiful tone and flawless technique."[25] This illustrates the interwoven nature of the necessary skills to play the trumpet. Each development in a skill positively influences other skills.

This section outlines the six types of preparation that comprise Arkaev's *Integrated Preparation System.* For each type of preparation, a description, examples, and texts will be referenced. These examples demonstrate how existing texts can function within the *IPS* and how to guide a student's development with this paradigm. They are by not only viable options for incorporation into the *IPS.*

Technical Preparation

Technical preparation is the process of learning the techniques necessary for a successful career playing the trumpet and refining those skills is a critical element of the *IPS*. Archaev states that "successes and failings of national gymnastics schools are primarily connected with the quality of basic technical preparation."[26] When outstripping development for technical preparation, it is paramount to start at the most basic, mastering those skills and exercises before graduating to the more complex. For

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[25] Vizzutti, Allen. 1990. *The Allen Vizzutti Trumpet Method, Book 1, Technical Studies*. Alfred Publishing Company. 120.
[26] Arkaev and Suchilin. 2004. 134.

combinations of skills, it is prudent to practice each constituent part independently. When complex skills are attempted prior to remedial work being completed, the habits formed in unsuccessful attempts to achieve the musical goal will create an inconsistent product.[27] This will impact not only the student's playing, but also their psychological well-being.

Below is the first exercise for double tonguing in Arban's *Complete Conservatory Method for Cornet.*

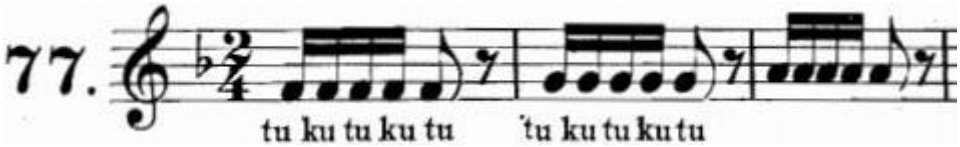


Figure 1. Exercise Number 77, Arban, J.-B., and Edwin Franko Goldman. 1900. *Arban's Celebrated Method for the Trumpet or Cornet, Also Eb Alto, Bb Tenor, Baritone Euphonium & Bb Bass in Treble Clef.* 175.

A common means of approaching this exercise would be to play it as written, albeit slowly, but upon further inspection, the skills can be reduced to simpler exercises. This exercise is comprised of the technical skills of tone generation, single tonguing, 'k' tonguing, and rhythm (also part of theoretical preparation). The original exercise can be reduced to facilitate development of the necessary skills.

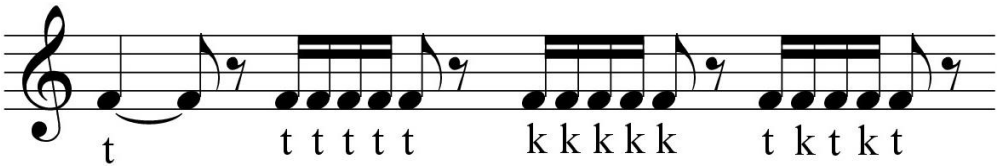


Figure 2. Reduction of Complexity in Exercise Number 77 from Arban's *Celebrated Method.*

[27] Duke, Robert A. 2014. *Intelligent music teaching: essays on the core principles of effective instruction*. 90.

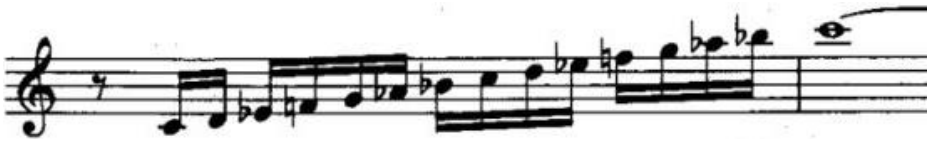
This reduced exercise is a microcosm of the skill development idea of outstripping development prevalent within Arkaev and Suchilin's methodology. The beginning F4 is a long tone with no interruptions to the sound. Every subsequent iteration of the F4 increases in complexity until the arrival of the actual music notated by Arban. This exercise can be played as written or in parts depending upon the needs of the student.

Determining the necessary remedial exercises for a student requires the use of the normative and speculative forecasts. The norm for any piece of music or exercise should be an excellent performance to which the student has access. This can be obtained through recordings or teacher modeling. An axis is drawn from that excellent performance to the student's current state of development. The teacher should be able to diagnose the necessary solutions for issues the student faces. A preparation system is crafted for the student and assigned which includes developmental exercises and pedagogical information. This system is the normative forecast and thus, the most efficient path to achieving the goal. As the student works through the system, the teacher is constantly comparing the student's progress to both the norm and the normative forecast. If the milestones in the normative forecast are not being achieved, then the teacher has to examine the tendencies of the student. These tendencies are taken into account and another preparation system is assigned. The process of student evaluation is continued until the goal is reached.

When a student needs to practice a musical excerpt and there are no underlying issues inhibiting growth, we can employ the end-to-beginning idea utilized in Arkaev and

Suchilin's methodology. The student starts at the end of the excerpt and practices a predetermined section. After mastery of this section, the student adds a preceding section and masters this new selection in addition to the first practiced selection. This overlapping practice serves as repetition and reinforcement of learned skills. In performance, the student is always moving through musical territory that is more familiar and practiced. Along these same lines, by practicing end-to-beginning, the student is practicing the ends of difficult phrases with the least amount of physical and mental fatigue. This translates to the student correlating the ends of difficult phrases with ample strength and a clear linear thought.

Below is an excerpt from third movement of Edward Gregson's *Concerto for Trumpet*.



Trumpet Concerto
By Edward Gregson

Figure 3. Mm. 183 of the Third Movement of Gregson's *Trumpet Concerto.*

This technical passage comes at the end of the third movement after the performer has been playing for over 20 minutes. The performer is required to double tongue a two-octave ascending C minor scale and sustain a C6 for six and a half beats. This is an

excellent candidate for end-to-beginning learning because it demands tongue and finger coordination and is at a point in the music where the performer may feel fatigued. Figure 4 is a sample practice regimen.

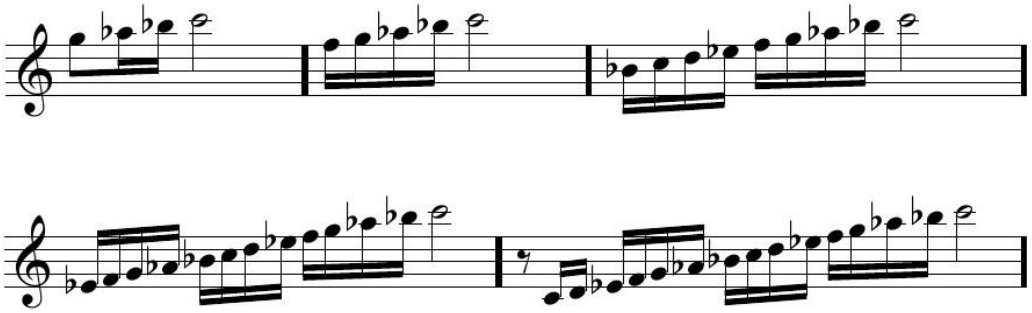


Figure 4. End-to-Beginning Reduction of Complexity in Mm. 183 in the Third Movement of Gregson's *Concerto for Trumpet.*

The practice regimen should start at a tempo that is slow enough to warrant correct coordination but with ample breaks to deter fatigue. Once the student masters the entire musical example at the slow tempo, the student should begin increasing the tempo at small intervals (two to five beats per minute). The student can also intersperse slurs as a way to reduce complexity and act as a control for timing.[28]

Mastery of a musical excerpt at performance tempo signals the end of the outstripping development phase. From this point, the student should move on to the optimal surplus phase. A goal of five to ten percent above performance tempo is ideal. This surplus will account for any nerves or adrenaline that might crop up during the performance.

[28] Snell, Howard. 2006. *The art of practice: a guide for music students*. Brighton: Pen.

Lastly, when choosing musical selections for or with a student for a recital, it is best that these selections, like a gymnastics routine, are not at "ceiling level."[29] Selections should be well within the student's technical limits.[30] This allows the student to focus their attention on making music instead of playing correct notes and rhythms.

Physical Preparation

It is essential for trumpeters to have strong facial muscles.[31] The systematic development of these muscles is necessary for the student. Unfortunately, it is not a matter of simple training of the muscles, but also their coordination with the airstream, lips, and the mind.[32] Conditioning and coordinating these acts can approached through a variety interconnected and mutually conditioned skills. Arkaev and Suchilin demonstrated this necessity for gymnastics in Figure 5.

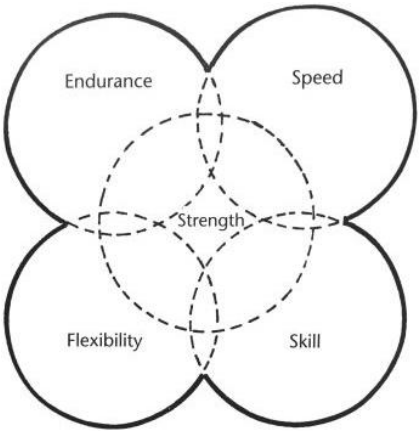


Figure 5. Strength Diagram. Arkaev and Suchilin, 2004, p. 145.

[29] Arkaev and Suchilin. 2004. 66.
[30] Duke, Robert A., and Amy L. Simmons. 2006. "The Nature of Expertise: Narrative Descriptions of 19 Common Elements Observed in the Lessons of Three Renowned Artist-Teachers." *Bulletin of the Council for Research in Music Education* (University of Illinois) (170): 7-19.
[31] Noble, Clyde E. 1964. *The psychology of cornet and trumpet playing; scientific principles of artistic performance*. [Missoula, Mont.]: [Printed by the Mountain Press]. 54.
[32] Naylor, Tom L. 1973. *A program of study for teaching class trumpet at the college level*. Document (DM)--Indiana University. 44.

Endurance can be defined as the ability of a muscle or muscle group to perform repeated submaximal force for a defined period of time.[33] Flexibility is the range of motion a gymnast can achieve.[34] Skill is the technical skill for a particular gymnastic movement and can be equated with *competency* or the ability to perform a given skill progression consistently[35]. These three facets, along with speed, comprise a gymnast's functional strength. This same concept can be applied to trumpet playing with little alteration. The strength requirements to play the trumpet mimic those to perform gymnastic movements.

In gymnastics, speed is developed to better the sprint portion for exercises, like the vault.[36] When it comes to speed on the trumpet, this quality is usually associated with flexibility (lip trills) and technical preparedness (finger dexterity, multiple tonguing). Speed will be addressed in those specific sections. A more accurate portrayal of the necessary physical qualities is created when incorporating sound volume to this model. The reason for sound volume inclusion will be addressed in its section. The new diagram is shown in Figure 6.

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[33] Alic, Margaret. "Muscular Strength and Endurance Tests." In *The Gale Encyclopedia of Fitness*, by Jacqueline L. Longe. Gale, 2012.
[34] Sands, William A., and Jeni R. McNeal. "Enhancing Flexibility in Gymnastics." USA Gymnastics Online. May 2000. https://www.usagym.org/pages/home/publications/technique/2000/5/flexibility.pdf.
[35] Low, Steven. 2016. *Overcoming gravity: a systematic approach to gymnastics and bodyweight strength*. 40.
[36] "Gymnastics Vault Needs 'Speed, Explosive Action'." July 31, 2012. https://www.npr.org/2012/07/31/157678598/gymnastics-vault-needs-speed-explosive-action.

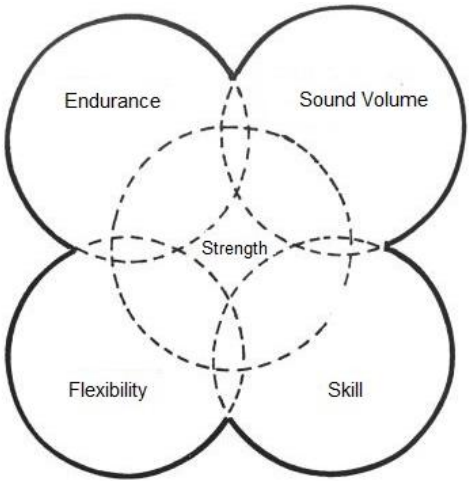

Figure 6. Strength Diagram Adapted for Trumpet.

Arkaev and Suchilin advise partaking in special strength exercises to cater to the development of top-class gymnasts. These exercises are done with A) the help of a coach or partner, B) independently, and C) with an artificial aid.[37] This idea can be adapted for trumpet students and incorporated into a practice regime that is practiced, at most, daily.

When first starting a student out on a strength regimen, it is necessary to start simple and then add complexity. Depending upon which facet of strength being trained, complexity can take many different forms and is not limited to only exercises and etudes with the trumpet, but also free-buzzing and mouthpiece buzzing as well. When guiding the student, it is the teacher's responsibility to hold the student accountable for maintaining the correct sound and form when performing strength-based exercises. Upon demonstrating an understanding of the form and musical goal to the teacher, the student should then perform the regimen independently.

[37] Arkaev and Suchilin. 2004. 140.

Technological aids are made to enhance facial musculature and wind power, two vital components in increasing functional strength. The most common exercise for embouchure strengthening is the “pencil trick” wherein a trumpeter holds a pencil parallel to the ground using only the muscles in the embouchure.[38] The isometric contraction of the facial muscles sustains the weight of the pencil. In his book *Chop Builder*, Clint “Pops” McLaughlin outlines a ten-week “pencil trick” workout routine.[39] This text operates on the principle of outstripping development by utilizing progressive overload (gradually increasing the stress on the body during exercise training).[40] The Chop-Sticks Advanced Embouchure Strengthening System operates on the same principle as the “pencil trick” but the resistance can be increased or decreased by use of a collection of stainless steel weights that can be added to the end of the rod.[41] These aids along with any other strength-based exercises can be effective in promoting growth but when done too much, can have detrimental effects on the student. These methods need to be paired with musical endurance exercises so the student can learn to recruit and coordinate the musculature with their air and mind.

Technological aids that help facilitate air delivery can also be useful in training young trumpeters. The use of breathing bags can serve as a visual demonstration of the quantity of air being both inhaled and exhaled. Another aid, the Breath Builder, can help demonstrate proper air quality. By sustaining a constant air pressure on both the inhale

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[38] Reinhardt, Donald S. 1964. *The encyclopedia of the pivot system for all cupped mouthpiece brass instruments*. New York: C. Colin. Appendix 4-5.
[39] McLaughlin, Clint. 2003. *Chops Builder*. Self Published.
[40] Stoppani, Jim. 2014. *Jim Stoppani's Encyclopedia of Muscle and Strength*. Champaign: Human Kinetics. 6.
[41] "What Is Chop-Sticks?" Chop-Sticks. http://www.liemartech.com/Chop-Sticks/index.htm.

and exhale, a ball stays at the top of a plastic tube. This constant air pressure is paramount when playing a brass instrument.

Flexibility

Like gymnastics, flexibility is one's ability to move throughout the range of the trumpet. Specific to trumpet, is one's ability to do this regardless of speed, articulation, or slur.[42] The embouchure, tongue, and air all work in conjunction to move from note to note. The goal of training flexibility is that extraneous motion of the embouchure and effort of the facial muscles are minimized for the intervals. Traditionally, slurs of the harmonic series are most common means to develop flexibility. While these do function, interval studies in which the performer engages the valves are also necessary to practice because the action adds complexity that is necessary to perform most literature.

The musical image is paramount when moving between notes because it serves as the guide for the physical coordination. Without a well-defined image, the student's mind is playing a reactionary role. This mindset attempts to correct issues after they have already happened instead of the mind commanding what is needed of the body. As the student becomes more adept at flexibilities, other physical aspects of trumpet playing are elevated because the playing itself has become more efficient.

James Thompson's *The Buzzing Book Complete Method* is a practical option for increasing flexibility because it facilitates the coordination of all constituent parts. Thompson writes,

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[42] Johnson, Keith. 1981. *The art of trumpet playing*. Ames: Iowa State University Press. 76.

> Buzzing on the mouthpiece has many benefits if done with a systematic and observant approach. Because the mouthpiece offers less resistance than does the instrument, buzzing helps accustom the player to use more air...It also makes the player more reliant on his ear to place pitches, just as a singer does...Finally, perhaps most importantly, mouthpiece buzzing allows the player to develop new and more refined aural/physical habits more easily.[43]

The method also adheres to the principle of outstripping development. Each exercise builds upon the previous exercise. The first exercise is a collection of long-tones in the staff on the mouthpiece alone. As the text progresses, glissandi demonstrate and reinforce efficient movement between pitches. This is done first on the mouthpiece and then on the trumpet. The final exercises of the text incorporate the upper register.

If there is aversion to mouthpiece buzzing, Dr. Charles Colin's *Advanced Lip Flexibilities, volumes 1, 2, & 3* offer a variety of flexibility exercises that systematically increase in difficulty while also reinforcing what the performer has already learned. Compare one repetition of exercise number 3 to number 9.

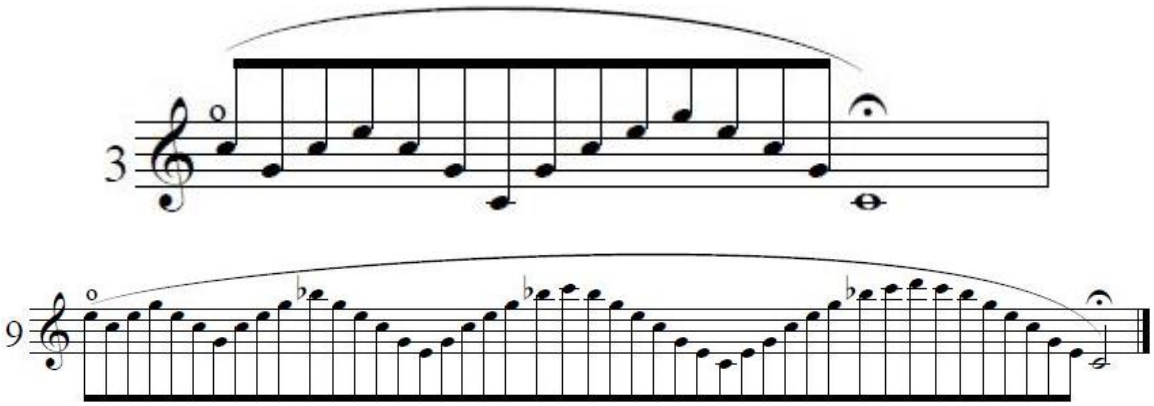

Figure 7. Exercises Numbers Three and Nine from Colin, Charles. 1980. *Advanced Lip Flexibilities: Trumpet : Complete : Including Vol. 1, Vol. 2 and Vol. 3*. 9.

[43] Thompson, James. 2001. *The Buzzing Book Complete Method.* Vaurmarens: Editions BIM. 3.

It is possible to see how exercise number 9 is an extension of the concepts honed in exercise number 3. While progressing through each volume, it is necessary for the student to master one exercise before attempting another so as to not reinforce habits detrimental to the performance of the exercise.

Range

Range is one of the more elusive aspects of trumpet playing and can be challenging to teach. While it is physical, playing in the upper register is as much about learning how to do so as it is about muscular development. The learning and physical training are tied together and one cannot be done without the other. Caruso stated, "the only way your muscles will learn is by exposure."[44]

Flexibility development plays a pivotal role in the development of range and because of this, range and flexibility are coupled in this model. As efficiency develops, range (and the security of that range) increases as a natural byproduct. Harmonic slurs into the upper register should be part of any student's preparation system if range is an issue. The second volume of Charles Colin *Advanced Lip Flexibilities* offers range building exercises that move throughout the registers, incorporate lip trills, and included widening intervals. Outstripping development in this text is achieved through its expansion of range by adding the next partial in the harmonic series to subsequent collections of exercises.

It is occasionally necessary to work on range within the context of a musical selection. One way to reduce complexity and create optimal surplus has been proposed by

[44] Caruso, Carmine. 1979. *Musical Calesthenics for Brass.* Hollywood, California: Almo Publications. 53.

James West, the professor of trumpet at Louisiana State University. In an article for the ITG Journal, West uses transposition to demonstrate how to practice the "ballerina's dance" from Stravinsky's *Petrouchka.* He believes that transposing the excerpt into a lower range will let the student focus on pitch and rhythmic accuracy.[45] As the student performs correct repetitions of the transposed material, they transfer the correct habits to each iteration of material as it is transposed closer to the original excerpt (system five of Figure 8). This is the outstripping development phase and it corresponds to systems one through for of Figure 8. Ideally, the student can play the excerpt after working through it in this manner. Optimal surplus comes from mastery of the excerpt transposed higher than originally written. This corresponds to the sixth system of Figure 8. What is also of note is his commentary above system three. He acknowledges that confidence is gained through this system. This has a direct correlation with the tenets of Arkaev and Suchilin's psychological preparation (which is discussed further in this document).

[45] West, James. "Repetition, Repetition, Repetition." *International Trumpet Guild Journal* 27, no. 2 (2003): 52-53.

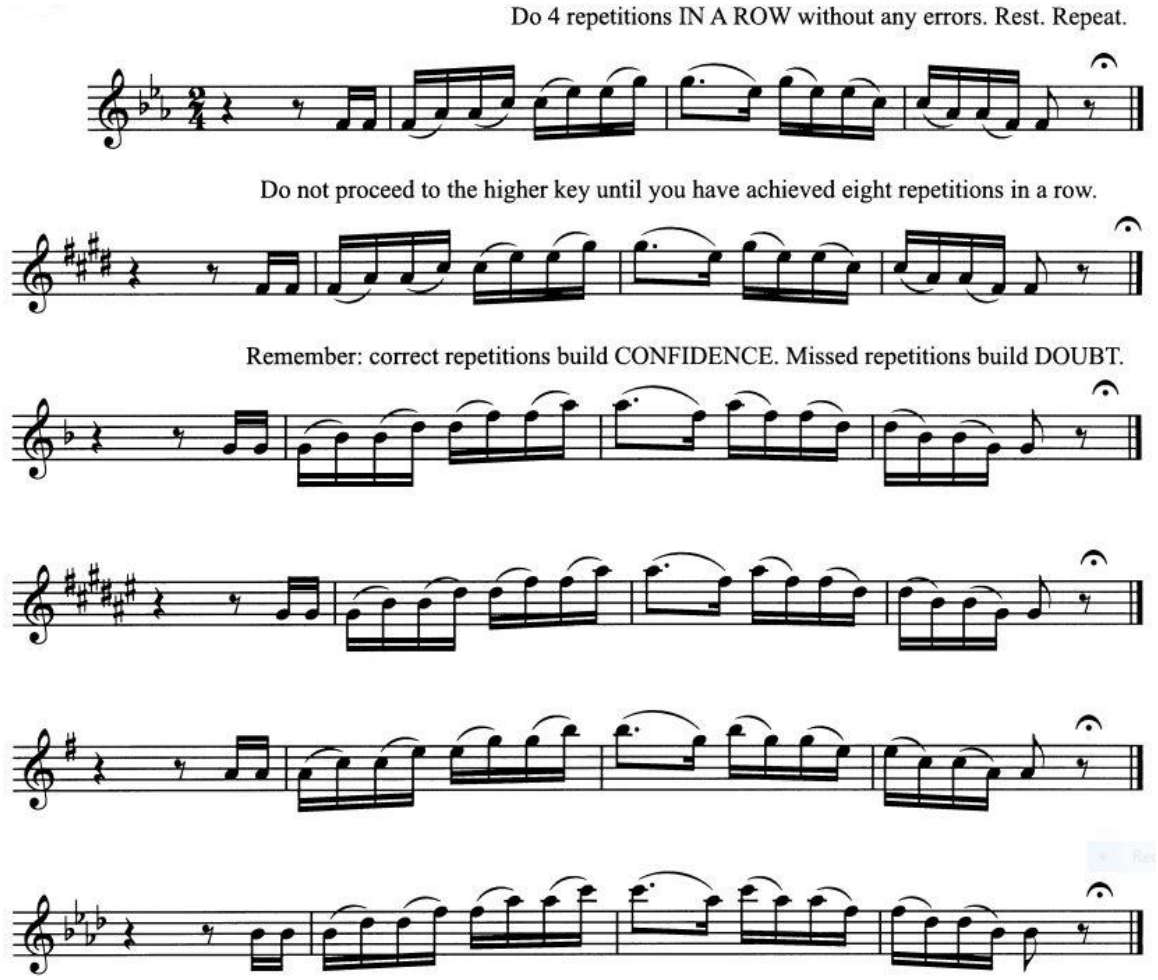

Figure 8. Graphic from West, James. "Repetition, Repetition, Repetition." *International Trumpet Guild Journal* 27, no. 2 (2003): 52-53.

Endurance

Naylor defines endurance as the ability to play the through the range of the trumpet with control and good tone over an extended period of time with sufficient rest periods.[46] Unfortunately, Naylor's definition relies on the supposition that a trumpeter gets sufficient rest. To realize the issue with this definition, a discussion of how the body processes muscle usage is in order. As muscles contract, they use the chemical *adenosine*

[46] Naylor. 1973. 103.

triphosphate (ATP). When the body uses this chemical, it begins to make more by breaking down carbohydrates (sugars). These sugars are converted into lactic acid which helps produce more ATP.[47] Fatigue sets in when there is an overabundance of lactic acid within the muscles.[48] With rest, the lactic acid is carried away by blood and is replaced with sugar to start the cycle again. With 30 seconds of rest, 50 percent of muscle power is restored and within two minutes almost all power is restored.[49] Back to Naylor's definition, a question arises when sufficient rest to replace the ATP is not possible. Specific training is in order to deal with this fact because trumpet literature is littered with examples of physically taxing pieces or excerpts in which no sufficient rest is possible. Two types of endurance preparation are necessary to deal with the unique needs of a trumpeter. As with all facets of the Integrated Preparation System, these types of endurance are not mutually exclusive. Improvement in one will positively influence another.

Static endurance is when the mouthpiece cannot leave the lips because there is no sufficient rest. The aim of practicing this type of endurance is to prepare the student's body physiologically (functional preparation) and the mind (psychological preparation) for handling musical selections that require this skill. The most popular method to improve static endurance was proposed by Carmine Caruso. In his book *Musical Calisthenics for Brass*, Caruso encouraged a constantly engaged embouchure that never

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[47] Sutton, Remar. 1987. *Remar Sutton's body worry*. New York, N.Y.: Viking. 47.
[48] Fox, Edward L., Jeffrey Bairstow, and Donald K. Mathews. 1980. *I.T., interval training for lifetime fitness*. New York, N.Y.: Dial Press. 15.
[49] Ibid. 19

left the lips, breathing through the nose, and playing until the sound ceased.[50] The exercises start from a simple long tone F4 and progress in difficulty to include two octave scales. Because Caruso's methodology is strictly muscular, musicality becomes a non-issue for the duration of the exercise. When employed correctly, *Musical Calisthenics for Brass* operates on the principle of outstripping development. A journal or spreadsheet should be kept to measure progress.

Conversely, *dynamic endurance* is when the mouthpiece can leave the lips and there is rest (although maybe not sufficient enough replenish all energy). It is in this realm that most of the playing as a trumpeter is done. Dynamic endurance can be cultivated by playing many hours throughout the day.[51] It can also be trained directly. Interval training can be borrowed from the athletic world to promote development in this skill. When using interval training, the user oscillates between periods of high activity and low activity over a set amount of time per each intensity of activity.[52] For example, sprinting for ten seconds (high activity) and then walking for ten seconds (low activity). This pattern is repeated for a targeted number of repetitions or time spent exercising is reached. Adapting this for development of dynamic endurance of the trumpeter means pairing playing time with resting time. An example of this would be playing for 20 seconds and then resting for 10 seconds and repeating. The student can alter the intervals to develop themselves systematically. For example, for the first week the student can play for 10 minutes with the interval 20 seconds playing and 10 seconds resting. Week two, 20

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[50] Caruso. 1979. 7.
[51] Hickman, David. 2006. *Trumpet Pedagogy: A Compendium of Modern Teaching Techniques.* Edited by Amanda Pepping. Chandler, Arizona: Hickman Music Editions. 152.
[52] Heyward, Vivian H. 2006. *Advanced fitness assessment and exercise prescription*. Champaign, IL: Human Kinetics. 106-107.

seconds playing and 9 seconds resting. Week three, 20 seconds playing and 8 seconds resting, etc. Keeping a journal of these exercises can show demonstrable growth to both the student and teacher. This process takes time to show results. Any check on progress should be done at least six months after starting an endurance program.[53]

Because the playing portion of this exercises is left open-ended the student should supplement *theoretical preparation* (which will be discussed further into this document) with this means of practice. The playing interval could be a means to develop sight-reading, transposition, and sight-transposition skills. By focusing on other skills, the student can improve necessary mental skills and endurance.[54]

A musical way to condition both types of endurance concurrently is through the use of etude books. Depending upon which book is used, the demands for each type of endurance can change. Oskar Böhme's *24 Melodic Studies*[55] (a collection of shorter etudes) and Allen Vizzutti's *Rhythmic Etudes*[56] (etudes with built in rests) in book three of his method are approachable for early collegiate students whose preparation system requires endurance development. After completion of these texts, more challenging and taxing etudes like those composed by Vassily Brandt, Théo Charlier, and Marcel Bitsch can be utilized. When practicing from etude books to facilitate endurance development, it is suggested that the student focus their attention on the desired result and not the feeling

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[53] Snell, Howard. 1997. *The trumpet: its practice and performance : a guide for students*. Hollington, England: Rakeway Music. 191.
[54] Johnson. 1981. 106
[55] Böhme, Oskar. 1985. *Twenty-four Melodic Exercises, Opus 20: For B-flat Cornet (Trumpet)*. Los Angeles, CA: Alfred Music.
[56] Vizzutti, Allen. 1990. *The Allen Vizzutti trumpet method: an intermediate/advanced method in three books*. Van Nuys, California : Alfred Publishing. 21-33

of playing long musical lines. If the student lets their mind drift, then they are no longer allowing the image to direct the actions.

The largest challenge to dynamic endurance for the university trumpet student comes in the form of the recital. Performing 30 to 60 minutes of music is usually the ultimate test of endurance. For this reason, the recital is programmed toward the end of the degree program. David Hickman suggests, "about a month before the performance, the entire program must be played straight through once, twice, or even three times each day so that the pacing can be adjusted and conditioned as necessary."[57] This develops not only the physical endurance, but what the student must do tactically (will be explored further) and illuminates what excerpts may still benefit from outstripping development. Optimal surplus occurs when a student's endurance exceeds the demands of the recital and can maintain a characteristic sound throughout.

Technological aids can be used to supplement endurance development away from the trumpet. Utilizing McLaughlin's *Chop Builder* or the *Chop-Sticks* can be efficient means of increasing the potential endurance of the embouchure.

Sound Volume

As a general rule, if a trumpeter is to play louder, more mouthpiece pressure has to be applied. The embouchure has to meet this increased pressure inward to the teeth with a proportional pressure pushing outward to the mouthpiece (pucker).[58] Furthermore, the muscles of the chest and abdominals are vital to the delivery of the airstream.[59]

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[57] Hickman. 2006. 178
[58] Hickman. 2006. 14
[59] Ibid. 183-186

Conversely, as a trumpeter plays softer, the system has to become more relaxed with less pressure exerted on the embouchure. Because of the range of motion necessary for both soft and loud extremes, sound volume training is its own facet of physical preparation.

Sound volume suffers from the inability to accurately measure unless all the practice variables (room, distance from microphone, direction, etc.) are removed from the equation. Because not every student has the ability to remove the variables, one has to be a little more creative in how to gauge development of the skill and the muscles. Of all the facets, attempting to develop sound volume may lead to injury quickest if not approached intelligently. The student should practice by alternating extremes, both loud and soft, for a given exercise or phrase with a rest interval between. This will ensure that the student's playing does not become askew in one direction or another. This material is practiced with the focus of maintaining a characteristic tone.

Skill

Skill refers to the amount of technical skill a performer has when performing a specific technical task. As a student better their technical skills with the ideal image, not only will their technical proficiency increase, but the physicality to achieve that image solidifies and becomes more efficient. Strategies to better technical skill can be found in the Technical Preparation section.

Tactical Preparation

Arkaev and Suchilin state that adequate tactical preparation produces the development of the following:

- varied thinking;
- readiness to perform successfully in competition in any form;
- ability to stand up to diverting factors and stress;
- development of habits of successful competitive struggle in unfavorable circumstances;
- ability to quickly and adequately react to unexpected situations;
- ability if necessary swiftly to change the routine while performing it[60]

To be tactically prepared means that regardless of the circumstances, either environmental or physical, the student is ready to perform at their best. Regardless of the issue, the student can change something about the performance that should make the performance better, whether it be with their playing, psychological state, or the instrument.

This type of preparation is honed by incorporating artificial diverting factors. An appropriate example of the necessary development of tactical preparation would be a professional audition. During preparation, modeling aspects like order of excerpts, time at which they are played, and time between excerpts can be effective means of creating those diverting factors and forcing the student to create strategies to cope with those factors. Christopher Martin used this methodology during his preparation for his winning audition for the Chicago Symphony Orchestra. Martin would perform three mock audition rounds consisting of standard orchestral excerpts, less standard and more challenging excerpts, and finally a round that would test his physical preparedness. He

[60] Arkaev and Suchilin. 2004. 152-153.

felt that this would help develop the physical and mental toughness needed for a successful audition.[61]

During preparation, a performance lab can be useful in creating an uninviting performance environment for the student by incorporating audience behavior that tries to distract and confuse the performer. Elevated heart-rate and shortness of breath, two common physical symptoms of anxiety, can be modeled by the student jogging or climbing stairs directly before performing. A teacher can model any musical aspect that may be within the realm of possibility for an audition committee to request. This can simulate uncertainty that could arise had a request been made to the student during the actual audition.[62] The likelihood of diverting factors influencing a performance are diminished when they are addressed and rehearsed during the preparation process.

Psychological Preparation

During performance, the threat of concentration being derailed by distractions, both internal and external, is pervasive.[63] Being psychologically prepared is one's ability to cope with those distractions and redirect concentration. According to Arkaev and Suchilin, modeling activity that exceeds the demands of competition leads to psychological stability during actual competition.[64] These models are combined with the other forms of preparation. For trumpet students, knowing he or she can complete tasks at hand despite diverting factors will more likely lead to focusing on the musical image during performance.

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[61] West, James. "Preparing for the CSO Audition: Reflections from Chris Martin." *International Trumpet Guild Journal* 30, no. 4 (2006): 54-55.
[62] Snell. 1997. 219.
[63] Green and Gallwey. 1986. 53-54.
[64] Arkaev and Suchilin. 2004. 154.

Performances of varied types are invaluable to psychological preparation. When a student prepares music in which their performance determines future outcomes (juries, auditions, recitals, etc.), it is best to model the physical and mental stress of live performance. One method is for the student to perform to perform as much as possible. This can happen in studio recitals, church, or in the performance section of applied trumpet.[65] When there is little to no loss of demonstrable skills, then optimal surplus of psychological preparation has been reached.

Preparation for both sports and music performance have been written about as both separate and similar philosophies.[66] This has created a field of research that is continually evolving today. Because of the highly personal nature of performance psychology and preparation, it is advisable for students to seek out texts that can facilitate their development. A few such books are: *Peak Performance: Mental Training Techniques of the World's Greatest Athletes* by Garfield and Bennet[67], *Psycho-Cybernetics* by Dr. Maxwell Maltz[68], *The Inner Game of Music* by Barry Green and Timothy Gallwey[69], and *Performance Success: Performing Your Best Under Pressure* by Dr. Don Greene.[70]

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[65] Libs, Jean M. "Preparation of the undergradate recital: An interview with Armando Ghitalla, Byron Pearson, and Jan David Roller." *International Trumpet Guild Journal* 13, no. 3 (1989): 30.
[66] Bellon, Dominique. *Application of Sport Psychology to Music Performance : A Study Based on a Review of Sport Psychology Literature and Selected Interviews with Professional Musicians*. PhD diss., Arizona State University, 2006. 5-8.
[67] Garfield, Charles A., and Hal Zina Bennett. 1985. *Peak performance: mental training techniques of the world's greatest athletes*. New York, NY: Warner Books.
[68] Maltz, Maxwell. 2016. *Psycho-cybernetics*.
[69] Green and Gallwey. 1986.
[70] Greene, Don. 2012. *Performance Success: Performing Your Best Under Pressure*. Hoboken: Taylor and Francis

Theoretical Preparation

Theoretical preparation is the acquisition of knowledge necessary for successful performance. The effectiveness of theoretical preparation is highly dependent upon the knowledge of the teacher. When working with students the teacher must have ample knowledge in topics including, but not limited to: instrument mechanics, artistry, music theory and history, psychology, physiology. The student needs knowledge in these areas as well, but in more limited amounts.

For developing successful trumpeters, the teacher should also seek to further educate themselves about all facets of trumpet playing. This includes, but is not limited to, exploring ideas from other trumpet teachers and teachers outside the trumpet world, seeking new pieces of music, and observing trends in equipment. Attending national and international conferences and reading the International Trumpet Guild Journal are strategies to stay current on trends in the profession. When in a university setting, inviting outside perspectives from whom the professor and the students can learn is invaluable.

For students, theoretical preparation must encompass all aspects of musicianship. These include, but are not limited to, time, intonation, rhythm, and artistry. Training attempted without regards to these aspects at best can result in subpar performance and frustration. Outstripping development can occur with the use of aids like metronomes for rhythm and time, and tuners and drones for intonation. Optimal surplus for pitch, rhythm, and time is reached when the student can pursue their artistic goals without being crippled by deficiencies in those aspects of musicianship. For artistry, the tool of recordings, score study, imagery, and instincts serve to be the most educational. Musical

selections should be practiced with an interpretation of how the student's part fits within the context of the music. Learning how to interpret a musical selection and attempting to recreate that interpretation is the outstripping development phase of this process. Optimal surplus is reached when they audience can fully understand the intentions of the player and those intentions fit within the greater context.

Functional Preparation

Functional preparation develops the physiological needs of the performer to compete at an elite level. Progress in this system results in muscular development and the coordination and training of various muscles and organs to produce a desired result. It should be noted that this development happens at an unconscious level and therefore can only be observed upon successful completion of complex tasks. Simply, the only way for the teacher to recognize that a student has the required functional ability to successfully perform a piece of music is if the student successfully performs it. The outstripping development phase of functional preparation is tied directly to that of physical and technical preparations. The preparation of those two facets have physiological benefits that are observable and quantifiable. When growing an optimal surplus, models exceeding the demands required for necessary tasks are useful. Examples of this include repeat performance of entire musical program after a brief rest period, performing the program multiple times per day, and performing each musical selection of a program twice during rehearsals. Along the lines of physical conditioning, the teacher should

advocate good sleeping, eating, and exercise habits to the students so they can recover from their playing obligations.[71]

[71] Snell. 1997. 193.

CHAPTER V

PREPARATION FOR AN UNDERGRADUATE RECITAL

In the fall semester of 2017, the present author had the opportunity to incorporate Arkaev and Suchilin's theory and methodology into the recital preparations of an undergraduate music education major. The recital program was as follows: selections from *Concerto in G minor* – Marcello/Hickman, *Trumpet of Castille* – Solomon, selections from *Concoctions* – Cheetham, *The Lord's Prayer* – Mallote, and *Oblivion* – Piazzolla/Clodfelter and Wilt. Programming of this sort allows the student to focus on the musical goal. The student played well enough to make a passing grade and complete the necessary semesters of trumpet studies for the degree program. Also of note, the student felt satisfied with the musical product. The following are three examples of the methodology in action and how they facilitated his preparation.

***Concoctions,* Velociped – Cheetham**

While playing this piece, the student consistently showed insecurity with notated articulations, rhythmic patterns, and correct valve combinations during the measures with consistent eighth notes. Below is an excerpt of the music:

Figure 9. Measures One to Nine from Cheetham, John. 1978. *Concoctions: for Trumpet*. Tenuto Publications.

To facilitate correct learning of the patterns, the author employed the end-to-beginning methodology in the following manner:

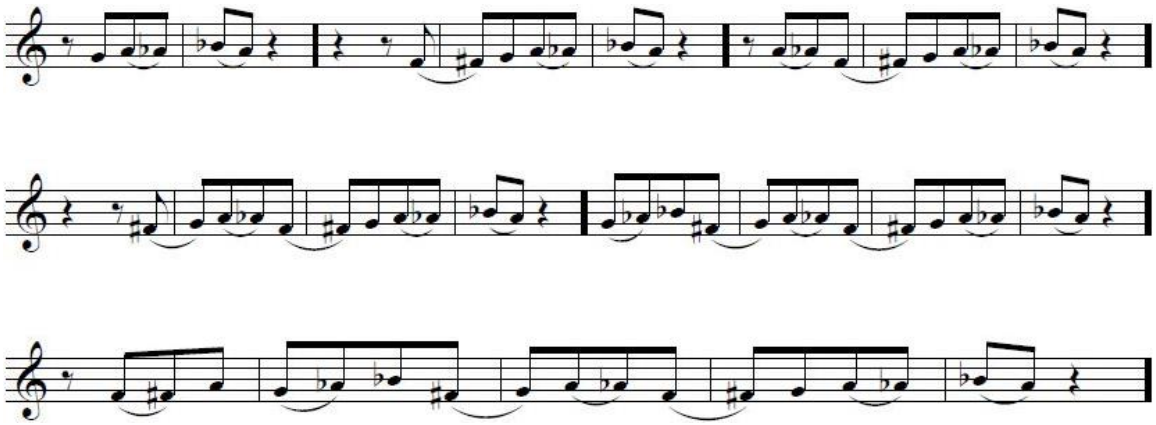

Figure 10. End-to-Beginning Reduction of Complexity in *Velociped*.

The author would set the metronome to a tempo half that of the student's current attempt. The student was instructed to mimic what the author played. We progressed through Figure 10 until the student could play the excerpt by memory. Once the music was learned at half tempo, the tempo then increased five beats per minute per every two successful repetitions. When the music was within 20 bpm of performance tempo, the increases came after three successful repetitions until the goal was reached. The author continued to increase the tempo pattern until the student could perform the excerpt at 15 bpm over the performance tempo.

The two types of preparation that were directly targeted during this exercise were technical and psychological. First, the author always ensured that a correct model always preceded the student's attempt. The incorporation of the end-to-beginning idea always allowed the student to focus intently on the new information while reinforcing the old.

The author guided the student through the outstripping development phase of technical preparation by systematically increasing the amount of music performed and the tempo at which to perform it. Once the performance tempo was reached, optimal surplus was the next goal. The optimal surplus directly tied to the student's psychological preparation. It had been demonstrated in their own playing that the student could perform tasks harder than music as it was printed. By having the student memorize the excerpt, familiarity with the music could help override extraneous factors that may detract from reading syncopated rhythms. This approach was applied to various troublesome areas in both the Cheetham and the Marcello.

***Adagio* from *Concerto in G minor* – Marcello/Hickman**

The challenges for the student in this movement were the written embellishments that manifested themselves as intricate rhythms. The following line includes 16th and 32nd notes in a very slow tempo.

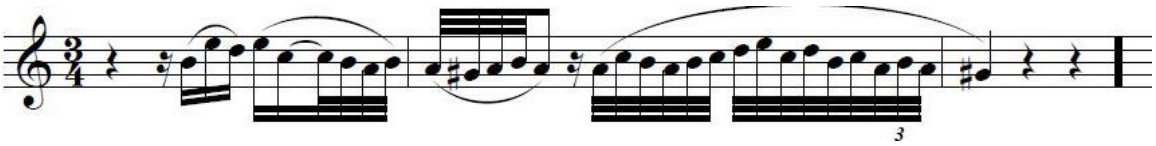

Figure 11. Excerpt from Marcello, Alessandro, and Hickman, David. *Concerto in G Minor*. Chandler, AZ: Hickman Musical Editions, 2010.

The student found it difficult to keep a steady pulse, properly subdivide, and play accurate rhythms. To start, the intricate rhythms were broken down into simpler rhythms of eighth notes. A skeleton for the musical line was established that demonstrated to the student which pitches fell on the down and up beats. From here, the exercise increased in

complexity by including the 16th notes in the last beats of the phrase and then moving forward. This method was applied to the 32nd notes and then the triplet 32nd notes so as to fully realize the written music. The final step was to remove the metronome and forced the student to keep time themselves. Below is an example of the simplified music.

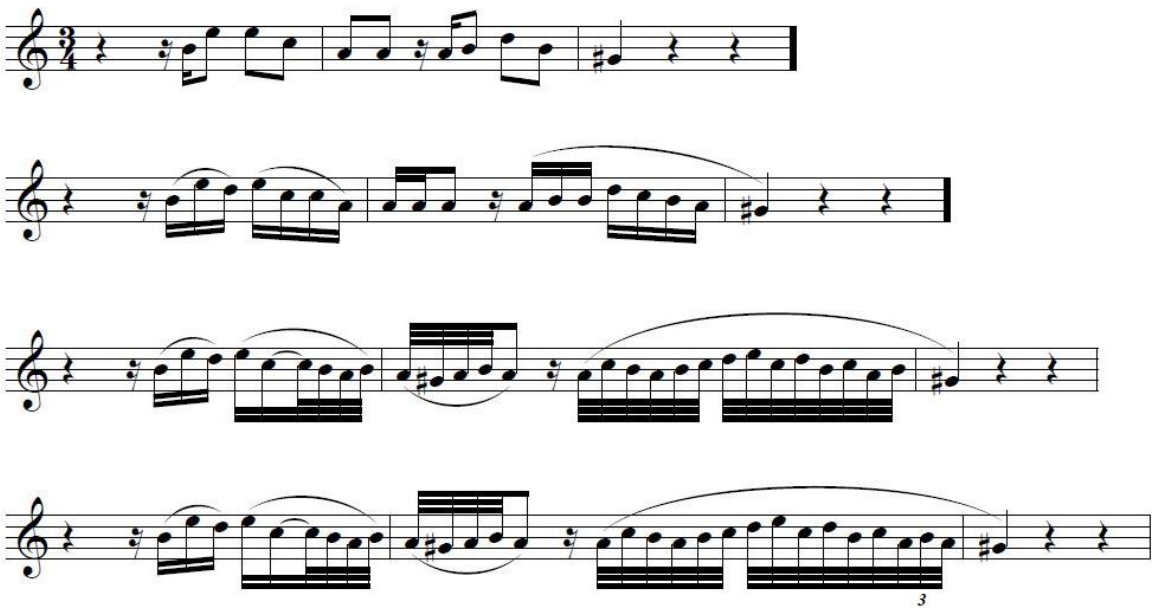

Figure 12. Reduction of Rhythmic Complexity for Marcello/Hickman Excerpt.

The greatest opportunity for growth was in the theoretical preparation of this excerpt. The outstripping development phase began with the systematic reduction of rhythm. As the student demonstrated mastery of the simpler exercises, the next step was to increase complexity by gradually reintroducing the faster rhythms back into the excerpt. Once the written excerpt was mastered, the correct repetitions of the excerpt without the metronome serve to reinforce temporal relationships maintained by the student without an aid. Optimal surplus was reached when the student was playing the excerpt correctly when performing the entire movement.

Recital Run-throughs

Prior to the recital, lessons with the student consisted of run-throughs of the program followed by feedback. The first run-throughs had the student playing to the author in the room that lessons are normally held. The subsequent run-throughs increased in complexity. First, the student played into an audio recording device and was instructed to analyze the performance. Second, the student performed the program in the performance hall and included stage entrances and exits. Third, the student performed the program twice through with no break. And lastly, the student was instructed to climb and descend two flights of stairs prior to the last run-through. The student was instructed to maintain a daily run-through schedule during their personal practice time.

These actions were instrumental in the physical, tactical, psychological, and functional preparations. By exposing the body to the stress of playing a recital, the necessary physiological changes take place to increases the dynamic and static endurance. This falls under the umbrella of functional and physical preparation, respectively. Tactical preparation is developed by the student confronting the discomfort of being on stage, playing for others, an elevated pulse, and rapid breathing. Because the recital models exceeded the demands of the actual performance, this contributed to the student’s psychological preparedness to play a recital for peers, friends, and family.

CHAPTER VI

CONCLUSION

Teaching and administrating a collegiate trumpet studio are difficult propositions, especially for a first-time professor. Compounding this issue is the lack of published writing about this subject. By delving into sports literature, whose goal is to create an elite performer in their field, one can start to extract the ideologies that go hand-in-hand with their value system. This document serves as a starting ground from which a new trumpet professor can begin to develop and nurture their own philosophies on how to teach and run a collegiate studio.

The model used by Arkaev and Suchilin has been of great success in the gymnastic world. By being vetted and aided by the USSR and Russian intellectual community, this system has undeniable scientific backing. This model has now been transferred into the trumpet community with little alteration. By invoking long-term practice strategies for students, one can track the collective growth of the studio over years. Furthermore, this growth is demonstrable to superiors. As for trumpet playing in general, being technically, physically, tactically, psychologically, theoretically, and functionally prepared means we stand a better chance at achieving our musical goals.

This model's success in the trumpet studio has had a modicum of vetting for usage undergraduate recital preparation. The student in question was pleased with their performance and it served to propel them into the next chapter of their lives. This

demonstrates positive preliminary results of the methodology. In the future, the model needs to be incorporated into collegiate trumpet studio from which the professor teaches and administrates for its full potential to be realized.

BIBLIOGRAPHY

Alic, Margaret. "Muscular Strength and Endurance Tests." In *The Gale Encyclopedia of Fitness*, by Jacqueline L. Longe. Gale, 2012.

Arban, J.-B., Allen Vizzutti, and Wesley Jacobs. 2007. *Complete method for trumpet*. Maple City, MI: Encore Music Publishers.

Arkaev, L. I., and Nikolaĭ Georgievich Suchilin. 2004. *How to create champions: the theory and methodology of training top-class gymnasts*. (15-20) Oxford: Meter & Meyer Sport.

Attar, Holly L. 2010. *A handbook for collegiate studio teaching: applying the seven principles for good practice in undergraduate rducation to music-centered instruction*. Cincinnati, Ohio: University of Cincinnati

Bellon, Dominique. *Application of Sport Psychology to Music Performance: A Study Based on a Review of Sport Psychology Literature and Selected Interviews with Professional Musicians*. PhD diss., Arizona State University, 2006.

Böhme, Oskar. 1985. *Twenty-four Melodic Exercises, Opus 20: For B-flat Cornet (Trumpet)*. Los Angeles, CA: Alfred Music.

Caruso, Carmine. 1979. *Musical Calesthenics for Brass.* Hollywood, California: Almo Publications.

Cheetham, John. 1978. *Concoctions: for trumpet*. Tenuto Publications.

"Chickering and Gamson 7 Rules for Undergraduate Education." http://citt.ufl.edu/tools/chickering-and-gamson-7-rules-for-undergraduate-education/.

Colin, Charles. 1980. *Advanced lip flexibilities: trumpet: complete: including vol. 1, vol. 2 and vol. 3*.

Duke, Robert A. 2014. *Intelligent music teaching: essays on the core principles of effective instruction*.

Duke, Robert A., and Amy L. Simmons. 2006. "The Nature of Expertise: Narrative Descriptions of 19 Common Elements Observed in the Lessons of Three Renowned Artist-Teachers." *Bulletin of the Council for Research in Music Education* (University of Illinois)

Fox, Edward L., Jeffrey Bairstow, and Donald K. Mathews. 1980. *I.T., interval training for lifetime fitness*. New York, N.Y.: Dial Press.

Garfield, Charles A., and Hal Zina Bennett. 1985. *Peak performance: mental training techniques of the world's greatest athletes*. New York, NY: Warner Books.

Green, Barry, and W. Timothy Gallwey. 1986. *The inner game of music*. Garden City, N.Y.: Anchor Press/Doubleday.

Greene, Don. 2012. *Performance Success: Performing Your Best Under Pressure*. Hoboken: Taylor and Francis

Gregson, Edward. 1984. *Trumpet concerto*. Borough Green, Kent: Novello.

Gymnastics HQ. 2014. "History of Gymnastics." http://gymnasticshq.com/history-of-gymnastics

"Gymnastics Vault Needs 'Speed, Explosive Action'." July 31, 2012. https://www.npr.org/2012/07/31/157678598/gymnastics-vault-needs-speed-explosive-action.

Heyward, Vivian H. 2006. *Advanced fitness assessment and exercise prescription*. Champaign, IL: Human Kinetics.

Hickman, David. 2006. *Trumpet Pedagogy: A Compendium of Modern Teaching Techniques.* Edited by Amanda Pepping. Chandler, Arizona: Hickman Music Editions.

Johnson, Keith. 1981. *The art of trumpet playing*. Ames: Iowa State University Press.

"Leonid Arkayev" International Gymnastics Hall of Fame. http://www.ighof.com/inductees/2011_Leonid_Arkayev.php

Libs, Jean M. "Preparation of the undergradate recital: An interview with Armando Ghitalla, Byron Pearson, and Jan David Roller." *International Trumpet Guild Journal* 13, no. 3 (1989): 30.

Low, Steven. 2016. *Overcoming gravity: a systematic approach to gymnastics and bodyweight strength*. 40.

Maltz, Maxwell. 2016. *Psycho-cybernetics*.

Marcello, Alessandro, and Hickman David. *Concerto in G Minor*. Chandler, AZ: Hickman Musical Editions, 2010

Mathie, Gordon William. 1969. *A theoretical basis for college trumpet study*. [Ann Arbor, Mich.]: [University Microfilms].

McLaughlin, Clint. 2003. *Chops Builder*. Self Published.

Naylor, Tom L. 1973. *A program of study for teaching class trumpet at the college level*. Document (DM)--Indiana University.

Noble, Clyde E. 1964. *The psychology of cornet and trumpet playing; scientific principles of artistic performance*. [Missoula, Mont.]: [Printed by the Mountain Press].

Reinhardt, Donald S. 1964. *The encyclopedia of the pivot system for all cupped mouthpiece brass instruments*. New York: C. Colin.

Sands, William A., and Jeni R. McNeal. "Enhancing Flexibility in Gymnastics." USA Gymnastics Online. May 2000. https://www.usagym.org/pages/home/publications/technique/2000/5/flexibility.pdf.

Snell, Howard. 1997. *The trumpet: its practice and performance: a guide for students*. Hollington, England: Rakeway Music.

Snell, Howard. 2006. *The art of practice: a guide for music students*. Brighton: Pen.

Stoppani, Jim. 2014. *Jim Stoppani's Encyclopedia of Muscle and Strength*. Champaign: Human Kinetics.

Sutton, Remar. 1987. *Remar Sutton's body worry*. New York, N.Y.: Viking.

Thompson, James. 2001. *The Buzzing Book Complete Method.* Vaurmarens: Editions BIM.

Thomson, Jonathan. 2014. *Training for performance: lessons from sports psychology applied to musical training*. [Los Angeles]: University of California, Los Angeles.

Vizzutti, Allen. 1990. *The Allen Vizzutti Trumpet Method, Book 1, Technical Studies*. Alfred Publishing Company.

Vizzutti, Allen. 1990. *The Allen Vizzutti trumpet method: an intermediate/advanced method in three books*. Van Nuys, California: Alfred Publishing.

West, James. "Preparing for the CSO Audition: Reflections from Chris Martin." *International Trumpet Guild Journal* 30, no. 4 (2006): 54-55.

West, James. “Repetition, Repetition, Repetition.” *International Trumpet Guild Journal* 27, no. 2 (2003): 52-53.

“What Is Chop-Sticks?” Chop-Sticks. http://www.liemartech.com/Chop-Sticks/index.htm.

APPENDIX A

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