CONTEMPORARY VOCAL TECHNIQUE IN THE CHORAL REHEARSAL: EXPLORATORY STRATEGIES FOR LEARNING

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Dedication

To ChoralSounds Northwest who constantly believed in me.

University of Washington

Abstract

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Singers today are often asked to perform in a variety of styles and genres, causing the choral teacher to be a specialist in multiple disciplines including areas such as vocal pedagogy, music history and ethnomusicology. Within the traditional choral canon, choral teachers are expected to teach authentic performance practice that incorporates changes in vocal production amongst varying style periods from Renaissance to contemporary choral music. Furthermore, over the last decade there has been a tendency for choral directors to program more multicultural music that requires an understanding of cultural ideals and vocal qualities. This diverse repertoire requires a different vocal approach than the standard western classical tradition. An added challenge is students' desire to sing contemporary commercial music (CCM), yet most teachers are not being trained in vocal technique associated with CCM. Since choral singers are asked to

create a variety of vocal qualities and switch between those qualities within a single performance, teachers should be trained to utilize a multifaceted approach to developing vocal technique. However research shows that there is a significant lack of training in the areas of CCM.

This document examines the correlation between *bel canto* and contemporary vocal technique through teaching the main tenets of breath, onset, and resonance. These tenets are examined and explored in relation to *bel canto* scholarship, modern vocal science, and the Estill Voice Training System (EVTS™). By developing a pathway between these styles teachers enhance their teaching of diverse repertoire without having to learn an entirely new pedagogy. Exploratory strategies and vocal exercises for developing a more multifaceted approach to teaching vocal technique are discussed throughout this document in conjunction with the warm-up process and individual instruction within the group ensemble setting. These exploratory exercises can be added to the teacher's current rehearsal process to enhance understanding of vocal technique associated with all CCM.

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CHAPTER 1

INTRODUCTION

Singers today are often asked to perform in a variety of styles and genres, causing the choral teacher to be a specialist in multiple disciplines including areas such as vocal pedagogy, music history and ethnomusicology. Within the traditional choral canon, choral teachers are expected to teach authentic performance practice that incorporates changes in vocal production within varying style periods from Renaissance to contemporary choral music. Furthermore, over the last decade there has been a tendency for choral directors to program more multicultural music that requires an understanding of cultural ideals and vocal qualities. This diverse repertoire requires a different vocal approach than the standard western classical tradition. However, many choirs utilize the same vocal production for all music causing the performance to be inauthentic. Others choose to change vocal technique associated with diverse repertoire without vocal health in mind. An added challenge is students' desire to sing contemporary commercial music (CCM), yet most teachers are not being trained in vocal technique associated with CCM. Since choral singers are asked to create a variety of vocal qualities and switch between those qualities within a single performance, teachers should be trained to utilize a multifaceted approach to developing vocal technique.

This multifaceted approach was foreseen in 1992-94, when the Music Educators National Conference (MENC; currently known as the National Association for Music Education [NAfME]) developed nine specific standards for music education. These standards represent what all students should be able to achieve and learn by specific grade level benchmarks. They are:

1. Singing, alone and with others, a varied repertoire of music.

2. Performing on instruments, alone and with others, a varied repertoire of music.

3. Improvising melodies, variations, and accompaniments.

4. Composing and arranging music within specified guidelines.

5. Reading and notating music.

6. Listening to, analyzing, and describing music.

7. Evaluating music and music performances.

8. Understanding relationships between music, the other arts, and disciplines outside the arts.

9. Understanding music in relation to history and culture[1]

Unfortunately, by and large these standards are not addressed to a great degree, rather, a specific, narrow view of specialization is still the model. Now, the marketplace is demanding that teachers shape curriculum and build technique that addresses what the MENC suggested two decades ago.

A multifaceted approach to vocal technique development can help students meet some of these expected outcomes in the choral setting. Approaching vocal technique in this way can help students learn how to maneuver various parts of the vocal mechanism alone and in combination to produce a variety of vocal colors. This can then be applied to all genres of music including, but not limited to blues, gospel, jazz, country, rock, pop, and musical theatre (Standard 1), reading and notating music of all varieties (Standard 2), evaluating music and music performances and gaining an understanding and language of diverse styles and techniques

[1] National Association for Music Education, "National Standards for Music Education," NAfME, http://musiced.nafme.org/resources/national-standards-for-music-education/ (accessed October 25, 2013).

through listening (Standard 7), and understanding music in relation to history and culture (Standard 9). The last standard is of particular interest because it involves understanding the foundational elements of vocal technique, inclusive of the *bel canto* tradition, and a discussion of techniques used throughout diverse cultures and genres.

Statement of the Problem

America is comprised of diverse people, philosophies, and preferences. Because of our diverse cultural traditions, we also have developed varied musical preferences, tonal biases, and the performing of genres specific to cultural and musical diversity. This document focuses on the argument for diversifying vocal and music education training to more reflect the NAfME guidelines and address the changing profile of professional singers. But how can this be done? Undergraduate music education curricula are already oversized in efforts to fulfill requirements in theory, history, aural skills, piano proficiency, teaching competencies, etc. And yet the question arises: Are we preparing students for what they will encounter in the workplace or are we replicating a curriculum designed toward creating musicians in a narrow and specific method? If the former, what needs to be added, removed or changed? A statement drafted by a subcommittee of the MENC entitled "Housewright Declaration" examines the future of music education. The following is a summary of this statement:

> [The statement] espouses the increased presence of popular music in American music classrooms, and warns that music teacher training must proceed accordingly by becoming more flexible in its purview of teaching competencies. The implication for pre-service music educators is that they should begin preparing now by learning to teach composition and improvisation, broadening their music vocabularies to encompass pop genres and all types of progressive music, exploring alternative notational systems, designing interdisciplinary projects, and otherwise developing their creative reasoning skills.[2]

[2] Carlos X. Rodriguez, "Music Education: Overview, Preparation of Teachers," State University, http://education.stateuniversity.com/pages/2256/Music-Education.html (accessed November 22, 2013).

There is growing concern that music teachers are not being trained for the current choral profession requirements associated with diverse styles. Additional resources need to be available to help teachers learn skills associated with contemporary vocal technique and pedagogy. A statement made by vocal pedagogue Scott McCoy validates this need.

> A perusal of the recent vacancy notices in the academy shows a significant percentage searching for candidates with the ability to teach multiple genres equally well. And the skill to work with a wide range of singers and styles has been *de rigueur* for independent teachers for many years…It is time to acknowledge that the world has changed, and that our curricula must be adapted to suit the needs and expectations of the real world, which includes skill in teaching both the classical and CCM genres and techniques. Many schools have already jumped on this bandwagon. It's time for us to join them.[3]

Purpose of Study

The purpose of this study is to examine the correlation between *bel canto* and contemporary vocal technique (CVT) and provide exploratory strategies for their application in the choral rehearsal. An attempt will be made to develop new strategies for teaching a diversified technique utilizing prior research, knowledge, and teaching methods. Wedding the foundational pillars of *bel canto* with CVT and demonstrating how traditional techniques can easily be modified will help teachers of all backgrounds "stretch" their technique, without having to learn an entirely new pedagogy. This document utilizes the basic tenets of *bel canto* vocal technique and modern vocal science including breath, onset, and resonance in connection with Jo Estill's research incorporated within the Estill Voice Training Program (EVTS™). The literature available helps create a multifaceted vocal pedagogy that can be used within all CCM in the choral rehearsal.

[3] Scott McCoy, "Why I Don't Teach Belting," *Journal of Singing* 70, no. 2 (2013): 181-182.

Need for Study

A primary need for the study of CVT is apparent in teachers' general lack of knowledge and training concerning how to healthfully and authentically perform CCM. A survey of preservice music teachers'[4] attitudes toward popular music in the music classroom found that the majority of respondents felt unprepared to teach popular music in the classroom and had little or no training in popular musical pedagogy. Furthermore, when asked for reasons for opposition to teaching such music, one of the most prominent themes was the perceived lack of depth or complexity.[5] This document will examine the complexities in CCM associated with the teaching of CVT and switching between vocal qualities.

Learning to feel, understand, and change specific elements within the vocal mechanism associated with CCM is certainly not a process that lacks in depth. Rather, it represents a multitude of complexities due to the diversity represented within and amongst genres including tonality, rhythm, melodic structure, performance practice, and vocal technique, which are prevalent throughout CCM. This is not to say that these musical and vocal elements are more or less complex than classical literature of the past or present. Instead it does point to the need for a broader knowledge of complex musical issues and vocal training and showcases the need for teacher training within all CCM. Students should not be expected to learn these styles authentically and healthfully on their own without guidance from music educators. Moreover, the

[4] A preservice music teacher refers to any undergraduate or graduate student in a music education methods course that has not yet achieved teacher certification.

[5] Gregory D. Springer, and Lori F. Gooding, "Preservice Music Teachers' Attitudes Toward Popular Music in the Music Classroom," *Update: Applications of Research in Music Education* 32, no. 1 (November 2013): 25-33.

need for study of diverse music and cultures with proper training can help students achieve an in-depth understanding of these genres and techniques.

> The important first step toward reengaging musically with the community is to revise music teacher education curricula to reflect current realities and prepare the next generation of music teachers to be less narrowly focused musically…Music educators should be versed in a wide variety of musical practices reflective of the Americas as a whole in order to prepare them for wherever they find a teaching position.[6]

Jones advocates for diverse musical experiences that enable music educators to be successful teaching a variety of genres and styles in any part of the Americas. Most importantly he makes the point that we are disconnected from the community needs and norms, causing a narrow focus on teaching and learning. With regards to choral music education, instead of reinventing choral pedagogy for each varied style, teachers can learn varied musical styles through an exploration of foundational elements and vocal techniques in common between styles.

This leads to a secondary need for study to showcase that teachers can utilize foundational elements of breath, onset, and resonance that are already part of choral pedagogy. It would be daunting for teachers or music education programs to consider developing an entirely new set of pedagogy to address diverse styles. Rather, if teachers start with students' current vocal quality and move into teaching new qualities with varied elements of breath, onset, and resonance, we can easily build a curriculum that directs students into learning varied qualities associated with both *bel canto* and CCM. There is no need to reinvent the rehearsal process. Much of CVT can be added to the rehearsal and warm-up structure that is already present. However, this document hopes to establish a layering of techniques that can help achieve the production of varied vocal

[6] Patrick Jones, "Returning Music Education to the Mainstream: Reconnecting with the Community," *Visions of Research in Music Education* 7 (2006): 1-19.

qualities. It also hopes to eliminate the notion that singing in contemporary styles is inherently "unhealthy" or "incorrect".

Scope and Limitations of the Study

This document is directed specifically to the public school choral rehearsal and amateur singers. Due to the limited research on CVT, this is a proposed pedagogical model within the choral classroom in which there is no expectation that students will achieve mastery. Instead it is a guide to exploring a more diverse potential of vocal technique, through describing the mechanistic association to sound necessary in CCM. Furthermore, this document utilizes foundational tenets associated with the *bel canto* style and CCM, but is not an in-depth study of the *bel canto* or belt qualities. Utilizing the teaching of *bel canto* tenets in combination with modern vocal science research and the EVTS™, I have created an exploratory guide to teaching CVT within the choral rehearsal. This document only utilizes aspects of the Estill model to show what is possible and is not intended to teach the entire Estill model. Teachers wishing to be trained in the Estill model should find a course taught by a certified master teacher or course instructor through Estill Voice International. Although the elements are laid out in a specific order for teaching and learning purposes, this should not be considered a proposed curriculum guide. The strategies listed in this document have been explored with the author's vocal studio and choirs but have not yet been studied quantitatively or qualitatively.

In the initial stages of research and writing, this document was centered on the belief that students should first learn *bel canto* quality and move outward into other vocal qualities associated with CCM. After implementations of these strategies with my choir, continued research, and my achievement of certificate of figure proficiency in the EVTS™, I found it more beneficial to begin from a neutral access point of breath and speech awareness, which is outlined

in chapter four. This allows students to feel mechanistic changes associated with varied vocal qualities first from a speech level. In this regard, elements associated with the *bel canto* tradition including breath, onset, and resonance are explored and varied from the student's current speech level and pattern. This speech awareness can then easily transition into singing with a neutral speech quality and then outwards to other vocal qualities.

The following chapters will present a review of literature describing both the *bel canto* and CCM vocal techniques. Chapters two and three will showcase the correlation between the main tenets of both traditions in regards to breath, onset, and resonance. Furthermore, both techniques will be discussed in relation to modern vocal pedagogy and science. Chapter four will provide exploratory strategies to implement CCM vocal techniques in the choral rehearsal. These exploratory exercises can be added to the teacher's current rehearsal process to enhance the learning of vocal technique associated with all CCM.

CHAPTER 2

THE *BEL CANTO* STLE AND ITS RELEVANCE TODAY

A Brief History

Bel canto, literally meaning "beautiful singing," was first associated with the virtuosic singing of the Italian Baroque solo song and opera during the sixteenth and seventeenth centuries. During this period vocal technique focused on the purity of vowels, balanced vocal quality, and freedom of agility seen within highly ornamented music. These techniques proliferated into the Italian courts and the music of composer Luzzasco Luzzaschi, who wrote for the Concerto Della Donne at the courts of Duke Alfonso II of Ferrara and Duke of Mantua.[1] The Della Donne's concert performances, showcasing new vocal prowess and virtuosic technique, influenced many other composers including Orlande de Lassus and Giulio Caccini. Specifically, these influences brought immediate change to Caccini's compositional style moving the Italian madrigal away from *stile antiqua*. He experimented with music for the non-amateur singer as can be seen in his work *Le Nuove Musiche,* a collection of solo songs written in 1602 with specific instructions on their performance. *Bel canto* scholar and pedagogue James Stark summarized this best:

> It is clear, then, that the 'Old Italian school of singing' grew out of courtly music of the late sixteenth and early seventeenth centuries, first in the luxuriant type of pseudo-monody as sung by female virtuosos associated with Ferrara and Mantua, and then in the new 'noble manner of singing' of Giulio Caccini and his coterie in Florence. With Caccini, vocal technique and new styles of recitative and monody were inextricably linked.[2]

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[1] James A. Stark, Bel Canto: *A History of Vocal Pedagogy* (Toronto: University of Toronto Press, 1999), 191-192.

[2] Ibid., 196-197.

The *bel canto* style continued its presence throughout the eighteenth century and throughout Europe with such composers as W. A. Mozart and G. F. Handel. However, it was not until the formation of teaching schools associated with vocal pedagogues Manuel Garcia and Giovanni Lamperti that the term *bel canto* gained usage and prominence, at which point in music history it became synonymous with the compositional style of V. Bellini, G. Rossini, and G. Donizetti. However, there was no clear demarcation between the Mozart and the so-called *bel canto* literature of the nineteenth century by Bellini, Rossini, and Donizetti.[3] Moreover, the term *bel canto* became a reaction to Romanticism in "1860 when it became clear that the newer school of *verismo* writing was making increasing vocal demands on singers."[4] More specifically, Duey believed, "it was primarily a reaction to the declamatory style of Wagner that made Italians rally behind the term *bel canto* and it was that struggle that made the term famous."[5] This Wagnerian or Germanic style incorporated a more pressurized or muscular technique known as *strauprinzip*.

Jander and Harris agree that "*bel canto* is usually set in opposition to the development of a weightier, more powerful and speech-inflected style associated with German opera and Wagner in particular."[6] These stylistic oppositions continue to exist in modern solo and choral music. Although freedom, imagination, and expression were characteristics of the Romantic style, it is

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[3] Richard Miller, *National Schools of Singing: English, French, German, and Italian Techniques of Singing Revisited* (London: The Scarecrow Press, 1997), xvi.

[4] Richard Miller, *On the Art of Singing* (New York: Oxford University Press, 1996), 139.

[5] Philip Duey, Bel Canto *in its Golden Age: A Study of its Teaching* Concepts (New York: King's Crown Press, 1951), 7-12.

[6] Owen Jander and Ellen T. Harris. "Bel Canto." *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed January 12, 2014, http://www.oxfordmusiconline.com.offcampus.lib.washington.edu/subscriber/article/grove/music/02551.

simplicity that dominates the vocal colors of the *bel canto* tradition. Some might say that florid lines and years of training are anything but simplistic, but the simplicity lies in the beauty of tone and ease of vocalism, free from tension.

Stark describes the complexity of this singing style: "such singing requires a highly refined use of the laryngeal, respiratory, and articulatory muscles in order to produce special qualities of timbre, evenness of scale and register, breath control, flexibility, tremulousness, and expressiveness."[7] Furthermore he believes that this technique differs from both choral singing and contemporary genres. While it is true that it requires years of refined training to be proficient in the *bel canto* style, the main foundational pillars comprising this technique are also paramount to CCM. Through modern vocal science we have a clearer understanding of what constitutes healthy vocalism, and many of these characteristics lay within the foundational elements of *bel canto* pedagogy. It is for these reasons that I believe that the *bel canto* tradition is still an applicable technique for use by current choral and voice teachers desiring a classical vocal quality.

Learning the elements of *bel canto* style also aides in equalizing resonance throughout register changes, and flexibility of pitch and intensity while maintaining a shimmering vibrato. It includes the techniques of legato, portamento, glottal articulation, floridity and trills, and tempo rubato in a tasteful and expressive way. "As musical epochs changed these elements adapted to meet the new demands, but the foundational elements were still present and are still present today."[8]

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[7] Stark, Bel Canto: *A History of Vocal Pedagogy*, xxi.

[8] Ibid., 189.

These elements are inherent in all styles of singing in our contemporary culture including CCM, which requires a firm understanding of breath management, onset, and resonance. For this reason the basic principles of the Italian *bel canto* style are the building blocks to understanding beautiful, flexible, and free vocal production in all styles.

Bel canto principles include:

1. *Il respiro* – passive inhalation with breath "falling into the body."
2. *Coup de glotte* – "stroke of the glottis," beginning each attack with the antagonist relationship known as the *appoggio* (lean into the voice), with equal amounts of subglottic pressure and vibration through onset and phonation.
3. *Chiaroscuro* – the blending and balancing of the opposing dark and light resonances with equal parts brilliance and roundness through the range and vowel spectrum.
4. *Messe di voice* – gradual crescendo and decrescendo that is well maintained within the body so that resonance can remain constant throughout.[9] This requires fine motor control of both subglottic pressure and airflow.

The learning of the *bel canto* style can help vocalists understand the main pillars of the vocal mechanism and the healthy production of a balanced quality. As Marchesi stated, "Every other method should be excluded as insignificant or pernicious. There are only two methods: the good one and the bad one. If the world knew the full truth it soon would be of my opinion…no judges can judge, nor can judgments be pronounced, until one method is adopted and taught all over the world, and every other method put aside as useless or dangerous."[10] Although

[9] Laurier Fagnan, "The Acoustical Effects of the Core Principles of the *Bel Canto* Method on Choral Singing," (DMA diss., University of Alberta, 2005), 7.

[10] Blanche Marchesi, *Singer's Pilgrimage* (New York: Da Capo Press, 1998), 267-282.

Marchesi's statement is rather bold, the viewpoint is valid; healthy singing is one that incorporates the main tenets associated with all vocal technique: breath, resonance, and onset.

Main Tenets of *Bel Canto* and their Relation to Modern Vocal Science

Although there are many tenets involved in the *bel canto* tradition I chose to focus on only three. The control of dynamics and intensity via the *messa di voce* is an advanced skill and will not be discussed, although it is beneficial in gaining vocal agility and freedom. What follows is a brief description of three of the tenets to provide the reader with quantifiable information based on past and current research. Many scholarly resources already exist with in-depth information on each tenet; these are listed in the bibliography at the end of this document.

Breath Management and *Appoggio*

Breathing is an unconscious process involving the work of multiple muscles throughout the respiratory cycle of inhalation and exhalation. However, singers should understand the respiration process and musculature involved to make breathing a conscious act. Early vocal pedagogues Lamperti and Garcia understood the importance of developing breath management awareness and technique. Lamperti believed the foundation of all vocal study lay in the control of breath beginning with noiseless inhalation, and making use of the diaphragm to control the breath economically.[11] The *bel canto* principle of allowing breath to fall into the body corresponds to Lamperti's view of inhaling noiselessly. It is important to note that modern science has proven that the diaphragm cannot be consciously controlled, even though it does act as the primary inspiratory muscle. However, singers can become aware of its movement by the

[11] William E. Brown, *Vocal Wisdom: Maxims of Giovanni Battista Lamperti*. Ed. Lillian Strongin (New York: Taplinger Publishing, 1931), 5.

effects it produces and sensations that occur in the ribcage and abdomen.[12]

Although voice teachers and pedagogues generally agree with Lamperti that proper breath management is the foundation of healthy singing, there is debate concerning which breathing technique is most efficient during phonation and the expiratory phase. Further research is needed to establish the effects of all breathing techniques on vocal production and articulation.

There are three common breathing techniques: clavicular, thoracic/intercostal, and abdominal/diaphragmatic. Most pedagogues agree that clavicular breathing is not suitable for healthy singing and can cause a closure of the throat and increase supraglottic tension. Doscher maintains "clavicular breathing produces tension in the collarbone and neck areas and makes muscular equilibrium of the extrinsic network difficult or even impossible." The larynx rides too high and efficient phonation and resonation are impaired.[13] Intercostal breathing, also known as rib breathing, involves maintaining an elevated sternum and expanded ribcage throughout the respiration process. Diaphragmatic breathing involves the descent of the diaphragm accompanied by an outward movement of the abdominal wall in both the epigastric and hypoepigastric regions.[14]

Vocal pedagogues Vennard, Miller, Alderson, and Doscher agree that efficient breathing for singing should include a combination of techniques. Two of the most commonly combined techniques are costal/intercostal breathing and diaphragmatic breathing. Vennard suggests that a combination of diaphragmatic and rib breathing is the most efficient means of breathing for

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[12] Scott McCoy, *Your Voice: An Inside View*, 2nd ed. (Delaware, OH: Inside View Press, 2012), 84.

[13] Barbara M. Doscher, *The Functional Unity of the Singing Voice*, 2nd ed. (Metuchen, NJ: Scarecrow Press, 1994), 212.

[14] McCoy, *Your Voice: An Inside View*, 90.

singing.[15] Miller asserts that the inhalation posture is maintained to ensure cooperative muscle activity in the entire torso including the pectoral, epigastric, umbilical, and diaphragmatic regions.[16] Alderson suggests that the most effective breathing method is one that combines all techniques, including slight expansion of the clavicular region upon inhalation. [17] Doscher states that diaphragmatic action is assisted by the intercostal muscles.[18]

When examining the *bel canto* technique of *appoggio* we also find a combination of two breathing techniques: costal/intercostal and diaphragmatic. The *appoggio* technique focuses on maintaining the position of inhalation with an elevated sternum, expanded rib cage, and outward movement of the lower thorax and epigastric region.

> Certain eighteenth-century authors urged singers to 'hold back' the breath while singing, that is, to create a balance between inspiratory and expiratory forces. In the nineteenth century, this idea was referred to as *lute vocale,* or 'vocal struggle', leading directly to the concept of *appoggio. Appoggio* referred not only to the balance between inspiratory and expiratory breathing muscles, but also the glottal resistance to breath pressure, airflow rates, and voice quality. It has been described as a 'total system' (*Ganzheit*), since it subsumes so many elements of vocal technique into a single pedagogical concept.[19]

The concept of *appoggio* as defined by Miller is "a system for combining and balancing muscles and organs of the trunk and neck, and controlling their relationships to the supraglottal

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[15] William Vennard, *Singing: The Mechanism and the Technic*, Rev. ed. (New York: C. Fischer, 1967), 20.

[16] Richard Miller, *The Structure of Singing: System and Art in Vocal Technique* (New York: Schirmer Books, 1996), 23-29.

[17] Richard Alderson, *Complete Handbook of Voice Training* (Englewood Cliffs, NJ: Prentice Hall, 1979), 39.

[18] Doscher, *The Functional Unity of the Singing Voice*, 19.

[19] Stark, Bel Canto: *A History of Vocal Pedagogy*, 118-119.

resonators, so that no exaggerated function of any one of them upsets the whole."[20] It is important to note that there are many variables involved with *appoggio*. The musculature and mechanistic setup during inhalation is only one portion of this technique. Although understanding this set-up helps with alignment and postural development for singing, it also sets up the process of expiration. Vennard states that this process starts by taking in enough breath but "…there must be no waste of breath. Short-winded singers take in air with obvious effort toward maximum chest expansion, but with the first word the thorax collapses."[21] He further describes the importance of maintaining the inspiratory sensation during expiration.

> The *rectus abdominis* attaches in the middle and the *obliquus abdominis* at the sides to the lower ribs, and these bones should be held firmly in their elevated position while the heavy muscles of the belly, counterbalanced by the powerful diaphragm (the muscles of inhalation), smoothly maintain air pressure as the gas gradually escapes through the glottis. The lowering of the sides of the costal cage should come at the end, not the beginning of the phrase, as a final expenditure of the "complementary breath."[22]

In this manner Vennard is suggesting a conscious control of the musculature during respiration. Although some of the current literature advocates using a controlled exhalation for sustaining tone, Reid warns against the idea of "breath control." He suggests that "the breath pressure should not be regulated or controlled because of any necessity for saving it, but solely for the purpose of meeting the energy requirements demanded by the pitch and intensity."[23] This distinction helps singers understand that only enough breath to begin phonation, or vibration of

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[20] Miller, *The Structure of Singing: System and Art in Vocal Technique*, 23.

[21] Vennard, *Singing: The Mechanism and the Technic*, 33.

[22] Ibid., 34.

[23] Cornelius Reid, Bel Canto: *Principles and Practices* (NY: J Patelson Music, 1978), 151.

the vocal folds, is necessary.

The other important components of *appoggio* involve balancing subglottic pressure with the onset of phonation. This balance can only be produced effectively with the antagonist tension between the inspiratory and expiratory muscles of singing.[24]

Breath Pressure, Airflow, and Onset

The same law of physics that applies to aerodynamics, known as the Bernoulli effect, applies to the vocal mechanism. After the expiratory process has begun and the vocal folds are nearly closed the Bernoulli effect pulls the vocal folds together. This is followed by a momentary pause in airflow until breath pressure pushes the vocal folds apart once again and the cycle repeats.[25]

Subglottal pressure is the relationship between vocal fold resistance, or pressure beneath the folds, and airflow; essentially the vocal folds are acting as a valve mechanism.[26] Variations in subglottal pressure are required for variations in intensity and changing of pitch. As subglottal pressure is raised so is the pitch and loudness. [27] However, Rubin *et al.* suggest that intrinsic laryngeal adjustments, reflected in glottal resistance, account for variations in vocal pitch and loudness more than airflow.[28] The *appoggio* technique utilizes this antagonist relationship between glottal closure and airflow in creating a balanced onset and free phonation.

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[24] Ibid.,152.

[25] Ibid., 42.

[26] Gillyanne Kayes, *Singing and the Actor*. 2nd ed. (London: A & C Black, 2004), 28.

[27] Johan Sundberg, "Breathing Behavior during Singing," *The NATS Journal* 49, no. 3 (1993): 7.

[28] Herbert J. Rubin, Cal M. LeCover, and William Vennard, "Vocal Intensity, Subglottic Pressure and Air Flow Relationships in Singers," *Folia Phoniatrica* 19, no. 6 (1967): 400.

An imbalance in this relationship will result in a glottal or aspirate onset. A balanced onset involves closure of the glottis simultaneously with the flow of air. A glottal onset involves the closure of the glottis previous to the flow of air. An aspirate onset involves the exhalation of air while the glottis remains partially or fully open. After the aspirate onset the vocal folds are usually brought together just enough for them to vibrate.[29] Vocal scientist Johan Sundberg suggests that a balanced onset and release of laryngeal tension create "flow phonation." He also found that singers who have a pressed or strained sound need a higher subglottal pressure to produce the same level of sound achieved with a lower subglottal pressure using flow phonation; showing that pressed phonation was less efficient than flow phonation.[30] Sears agrees that the critical element of breath control is the regulation of subglottal pressure.[31] The traditional *appoggio* technique incorporates the same ideals as flow phonation and requires for a regulation of subglottal pressure needed for purity of intonation. Additonally, Reid maintains that through the correct antagonism (associated with *appoggio*), very little of the breath taken in is used.[32]

Stark advocates for the usefulness of *appoggio* stating, "while [*appoggio's*] quantification in scientific terms remains to be fully determined, its usefulness as a pedagogical concept has long been an important factor in the history of vocal pedagogy."[33] The teaching of *appoggio* can help students achieve Sundberg's "flow phonation," and understand the amount of

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[29] Julia Davids, and Stephen A. LaTour, *Vocal Technique: A Guide for Conductors, Teachers, and Singers* (Long Grove, IL: Waveland Press, 2012), 51.

[30] Sundberg, "Breathing Behavior during Singing," 4-9.

[31] Thomas A. Sears, "Some Neural and Mechanical Aspects of Singing," In *Music and the Brain* ed. M. Critchley, and R.A. Henson, 78-94 (London: Heinemann Medical Books, 1977), 84.

[32] Reid, Bel Canto: *Principles and Practices*, 153.

[33] Stark, Bel Canto: *A History of Vocal Pedagogy*, 120.

airflow required for many vocal qualities.

Chiaroscuro and Resonance

After the initiation of sound the vocal folds produce fundamental and harmonic frequencies that are amplified by the vocal tract. "[T]he hollow physiological structures of the vocal tract (the larynx, the pharynx, and the mouth) resonate to produce an improved tone and higher sound levels. These structures also act as an acoustic filter, dampening some frequencies."[34] Adjustments to the vocal tract produce variations in vocal qualities and resonance.

> Every time we change the shape of the vocal tract, resonance is altered. Careful movements of the tongue, jaw, soft palate, larynx, and pharyngeal wall provide the exquisite control of resonance that enables singers to produce a musical scale with uniform timbre, to create vowels required for language, and to portray the entire range of human emotion through song. When the vocal tract is resonant, standing waves synchronize with vocal fold oscillation and assist in closing the glottis, increasing vocal fold efficiency.[35]

Vennard agrees with McCoy "that when we are learning the shaping of cavities above the larynx, we are training the vocal cords unconsciously at the same time."[36] The *bel canto* tradition also incorporates vocal tract adjustments to produce "purity of intonation." In the early eighteenth and nineteenth centuries, the ideal resonant voice quality within the *bel canto* tradition was known as *chiaroscuro*, or "bright-dark" tone.[37] Balancing resonance in this way was of importance to early *bel canto* teachers Garcia and Lamperti.

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[34] Davids and Latour, *Vocal Technique: A Guide for Conductors, Teachers, and Singers*, 63.

[35] McCoy, *Your Voice: An Inside View*, 36.

[36] Vennard, *Singing: The Mechanism and the Technic*, 80.

[37] Stark, Bel Canto: *A History of Vocal Pedagogy*, 33.

> The clear timbre imparts much brilliancy [*chiaro*] to the chest register, but when exaggerated make the voice shriek and shrill; whereas the sombre [*scuro*] gives it breadth and roundness – for by means of the latter only, the rich quality of the voice is obtained. This, however, when exaggerated, muffles the sounds, and makes them dull and hoarse.[38] Although you may acquire a wide range of voice, you cannot modulate the sounds until the resonance of your tones becomes round and rich, *chiaroscuro*…Though resonance has many colors it does not jump from place to place, but is modified by the movement of the lips in vowel formation…The "dark-light" tone should always be present.[39]

There are three main resonating cavities within the vocal tract: the larynx, the pharynx, and the oral cavity. The pharynx is divided into three separate resonators called the laryngopharynx, oropharynx, and the nasopharynx. Vennard believes the pharynx is the most important of the resonating cavities as the singer can accurately and consciously control it.[40] Furthermore, Vennard examined the importance of the nasopharynx as a resonating cavity. The raising of the velum (soft palate) can close off this cavity, but some vocal pedagogues advocate having nasal resonance while singing. However, in his experiment Vennard blocked off the nasal passages and sinuses with gauze and water to see if there were changes in their resonant properties. The results showed that neither nasal nor sinus resonance had validity in changing the sound.[41] This of course does not pertain to nasal vowels within the French language or consonant sounds commonly associated with a lowering of the velum.

Certain adjustments within the vocal tract produce various alterations to the singer's resonance. Adjusting the vertical position of the larynx affects the *chiaroscuro* balance: the

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[38] Manuel Garcia II, *A Complete Treatise on the Art of Singing,* Part 1, trans by Donald Paschke (New York: Da Capo Press, 1984), 4.

[39] William E. Brown, *Vocal Wisdom: Maxims of Giovanni Battista Lamperti*, 38-39.

[40] Vennard, *Singing: The Mechanism and the Technic*, 92.

[41] Ibid., 96.

shorter the length the more *chiaro* or brighter the sound; the longer the length, the more *scuro* or darker the sound. Furthermore, expanding or increasing pharyngeal volume by raising the velum, lowering the back of the jaw, and pulling the tongue out of the pharynx improves its resonating characteristics.[42]

Adjusting these cavities in both shape and volume affect the formant frequencies or resonances of the vocal tract. Stark provides a summary of the modern formant theory first published by Hermann Helmholtz in 1862.

> [According to the modern formant theory] the voice source – the glottis – produces a *harmonic series,* consisting of the fundamental frequency and a large number of partials or *harmonics*…While [formants 1 and 2] largely determine the vowel, it is the strength of all the formants which determine the tone colour…Adjusting the vocal tract in order to align formants with harmonics…is known as *formant tuning.* This singer might think of this as…modifying the vowels.[43]

All vowels have certain fundamental and harmonic frequencies associated with them. The vowel spectrum moves from *chiaro* [i] to *scuro* [u]. The balancing of these frequencies throughout the range requires the correct adjustments of the vocal tract by working with vowel formation and resonance awareness associated with *chiaroscuro*. However, finding the balance can be difficult and James McKinney provides multiple causes for an overly dark or overly bright tone.[44] Finding the balance within the *bel canto* tradition was accomplished through vowel purity, which correlates to modern science's idea of the adjustable vocal tract.

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[42] Ibid., 119.

[43] Stark, Bel Canto*: A History of Vocal Pedagogy*, 48.

[44] James C. McKinney, *The Diagnosis & Correction of Vocal Faults: A Manual for Teachers of Singing and for Choir Directors*, Rev. and expanded ed. (Nashville, TN: Genevox Music Group, 1994).

> The constant striving of the early masters of singing toward the goal of vowel purity, therefore, was in effect an effort by instinct whose purpose was to duplicate a favorable acoustic condition. To form a 'pure vowel' is to set the vocal organs in a favorable adjustment, and this adjustment then awakens a desirable harmonic response increasing the beauty and purity of the tone quality. This is the only means at the singer's disposal for gaining satisfactory control over the acoustical condition of the voice.[45]

The final formant of importance is known as the singer's formant. This is a band of high-frequency resonance that occurs around 2500 to 3500 Hz. This formant is essential for singers to be heard over large orchestras. Because of the work of vocal scientists Johan Sundberg and Ingo Titze, voice teachers know more about how the singer's formant is formed. "Current research indicates that production of singer's formant is associated with a long closed phase in the vocal fold vibratory cycle, narrowing of the vocal tract immediately above the larynx, a wide pharynx, and adjustment of the articulators to maximize close cavity coupling."[46]

There are varying opinions of the use of singer's formant in the choral setting. A study comparing the voice use in solo singing and choral singing found that soloists have more power in the singer's formant region in solo mode and more power in the fundamental region in the choral mode. Furthermore, it was found that soloists usually adjusted their levels to the levels of other singers.[47] However, Davids and Latour believe that singer's formant can be very helpful when a choir is singing with an orchestra. Fagnan experimented with five different types of choirs using the main principles of *bel canto* technique discussed above and their effect in the choral setting. He found success in all four main tenets. Notably he found employing the concept

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[45] Reid, Bel Canto: *Principles and Practices*, 38.

[46] Jean Callaghan, *Singing and Voice Science* (San Diego: Singular Publishing Group, 2000), 72.

[47] Thomas D. Rossing, Johan Sundberg, and Sten Ternström, "Acoustic Comparison of Voice in Solo and Choir Singing," *Acoustical Society of America* 79, no. 6 (1986): 1975-1981.

of *le coup de glotte* significantly improved the level of upper spectrum energy associated with the singer's formant while lowering levels of energy near the fundamental frequency. He also found that *chiaroscuro* resonance caused the choral groups to attain a more homogenous sound and more consistent intonation throughout the vowel spectrum. Overall, *bel canto* techniques were found to be effective tools in improving the overall vocal technique of choral groups.[48]

The Current Vocal Tone Debate

During the nineteenth and twentieth centuries vocal style began to change in response to the expansion of concert halls, the increase in instrumental forces, and advances in technology. The first of these changes could be seen in the nineteenth century with the Germanic tonal ideal that required a more powerful and dramatic singing style for the operas of Wagner and Verdi.[49] During this time, power of facility in singing was admired over florid singing ability. Striving for a pure legato was overtaken by the newly formed Germanic declamatory style, *Sprechgesang.* Furthermore, a darker tone quality, slower vibratory rate, and heavier overall vocal production became synonymous with the Germanic ideal. Miller adds that a fixed vocal tract, "one 'ideal' mouth and jaw posture through which the vowels are sung are united in the typical German-Nordic School of vocal technique."[50] He further associates the depressed, low-laryngeal position with the German school.[51]

Early twentieth century American choral directors adopted various approaches to choral

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[48] Laurier Fagnan, "The Acoustical Effects of the Core Principles of the *Bel Canto* Method on Choral Singing," (DMA diss., University of Alberta, 2005), 132-133.

[49] Stark, Bel Canto*: A History of Vocal Pedagogy*, 119.

[50] Richard Miller, *National Schools of Singing: English, French, German, and Italian Techniques of Singing Revisited*, (London: The Scarecrow Press, 1997), xxvi.

[51] Ibid., 90.

tone including these Italian and Germanic styles. Most research describes two approaches: the first increases the dynamic level and the tone quality of the individual singer in order for each singer to sing as a soloist. The second reduces the dynamic level and tone quality of each individual singer in order for all singers within the ensemble to match each other.[52] These two approaches could be seen in the well-known choral schools of St. Olaf and Westminster Choir College.

In "The Development of a Choral Instrument," Howard Swan describes various approaches to the establishment of American choral tone. He suggests that the choir's tone quality is most directly influenced by the conductor's approach to the rehearsal process. Swan examines the development of choral tone in six different choral ensembles and their conductors.[53]

> Two of the choral schools described by Howard Swan, Schools A [Westminster Choir College] and C [St. Olaf] influenced the choral movement throughout the United States in the early Twentieth Century. Their role in the training of many choral conductors and extensive touring by choirs at both schools contributed to this impact. Furthermore, their divergent approaches to choral tone have influenced the choral sound sought after by many conductors throughout the country.[54]

All national schools of singing have influenced these diverse approaches to choral tone. "Pedagogically, some of the most important concepts of the period were the straight-tone singing, the dark choral tone, the emphasis upon blending of similar voices, [and] the vowel-is-

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[52] Brian J. Knutson, "Interview with Selected Choral Conductors Concerning Rationale and Practices Regarding Choral Blend," (PhD diss., Florida State University, 1987), 6.

[53]Harold A. Decker, and Julius Herford, *Choral Conducting Symposium*, 2nd ed. (Englewood Cliffs, NJ: Prentice Hall, 1998), 23.

[54] Alan Zabriskie, "Evolution of Choral Sound of the St. Olaf Choir and the Westminster Choir," (PhD diss., Florida State University, 2010), 2.

the-tone concept of singing."[55] One such conductor, F. Melius Christiansen of St. Olaf, studied in Leipzig, Germany and taught singers to create an overall dark tone quality throughout the vowel spectrum. Zabriskie maintains that, "[Christiansen] preferred placement of sound in the back of throat to create a dark sound."[56] However, there are contemporary choral conductors in America that seek to develop a more balanced *chiaroscuro* tonal ideal such as Joseph Miller at Westminster Choir College. Zabriskie asserts that Miller's, "resulting sound, however, tended toward the *chiaro*, thus creating a bright overall sound…[Miller] altered the sound and made it flexible through manipulation of vowel sounds towards either a bright or a dark color."[57]

There is also debate among vocal pedagogues who differentiate vocal technique associated with choral singing from solo singing. Smith states "[choral singing] gives little emphasis to the singer's formant, neutralizing idiosyncrasies of individual singers to create a blend of voices."[58] However, Miller does not believe there should be such conflict between training the solo voice and the singer in a choral ensemble. "The answer for the choral conductor is not to make solo singers emulate the technical level of amateur voices but to work for a more efficient production from the less proficient singers."[59]

Further evidence of the diverse tonal preferences can be seen between European and American choirs. Quist showed two highly distinguished conductor's tonal ideals via

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[55] Gerald F. Darrow, *Four Decades of Choral Training* (Metuchen, NJ: ScarecrowPress,1975), 3.

[56] Zabriskie, "Evolution of Choral Sound of the St. Olaf Choir and the Westminster Choir," 13.

[57] Ibid., 87 -88.

[58] Brenda Smith, and Robert Thayer Sataloff, *Choral Pedagogy*. 2nd ed. (San Diego: Plural Publishers, 2006), 182-183.

[59] Miller, *On the Art of Singing*, 58.

spectrograms. The two spectrograms below (figure 1) show the same passage of music from Sergei Rachmaninov's "Bogoroditse Devo" from the *Vespers.* The first choir is a professional Swedish choir; the second is a professional American choir. The x-axis shows time, the y-axis frequency, and the intensity of color shows volume.

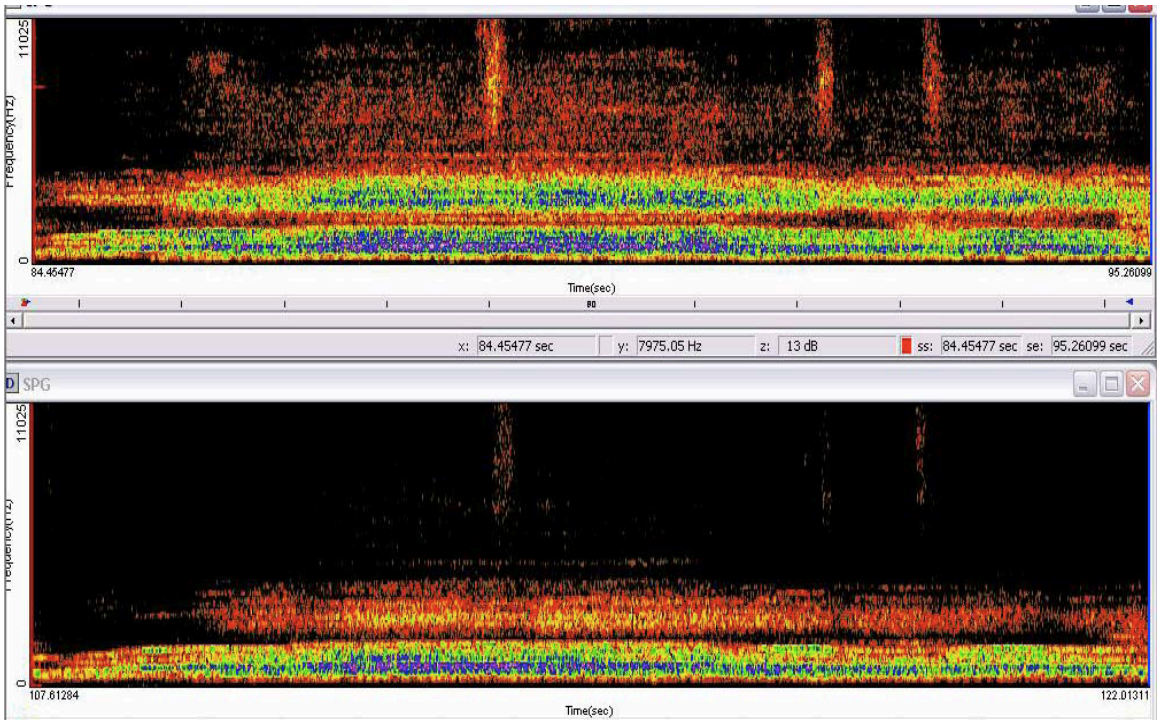

Figure 1. Spectrograms of two choral aesthetics.[60]

The upper spectrogram of the Swedish choir shows much higher frequency bands, including a much stronger presence in the singer's formant region than the American choir. Quist asserts, "[c]hoirs that sing with a characteristic 'darkened' vowel color without ring may not only become tired, but also tend to sing below the pitch."[61]

[60] Amanda Quist, "Choral Resonance: Re-examining Concepts of Tone and Unification," (DMA diss., University of North Texas, 2008), 19-20. Used with permission from author.

[61] Ibid., 21.

It is my belief that *bel canto's* main tenets promote healthy singing, and have been proven successful through scholarly research and evidence. In the twenty-first century vocalists should be encouraged to become more versatile in their technique and to perform diverse genres. This only further propagates the necessity to understand the basic foundational elements to all healthy singing incorporated within the *bel canto* tenets: breath, onset, and resonance. The vast array of tonal concepts in choral programs can propagate a singular aesthetic ideal (such as an overly dark, depressed laryngeal position with a high level of airflow) without an understanding of voice science and technique. However, teaching from a neutral access point of each tenet associated with *bel canto* can help singers understand the connection of speech to singing in a healthy manner without propagating a singular aesthetic ideal. Singers can then branch outwards into the myriad of vocal qualities within diverse genres by making subtle changes to any main tenet or component of the vocal mechanism. These changes correlate with the main principles associated with CCM discussed in chapter three. James Stark summarizes it best:

> "A recurring theme in vocal history is the decline of good singing and the loss of the secrets of the old Italian school. But this may only be a cyclical reaction to the mutations of *bel canto,* as singers met the challenges of new musical styles by modifying their technique rather than abandoning its essential components…Just as a prism breaks a single beam of light into many different colours, *bel canto* represents a way of singing in which a basic vocal technique accommodates itself to a wide spectrum of musical styles."[62]

[62] Stark, Bel Canto*: A History of Vocal Pedagogy*, xxv.

CHAPTER 3

CONTEMPORARY VOCAL TECHNIQUE ASSOCIATED WITH CONTEMPORARY COMMERICIAL MUSIC

The Growth of Contemporary Commercial Music

As a singer and choral educator it is evident that composers are adopting popular vocal idioms, and traditional solo and choral repertoire continues to explore varied styles of CCM. Moreover, contemporary culture has seen an influx of popular music-based television shows including American Idol, The Voice, Smash, Glee, and more since 2002. These shows have not only garnered a large viewer base, but have also influenced students to become more involved with music in schools. According to a 2011 CNN poll, conducted by Harris Interactive, musically themed shows such as "Glee" and “Camp Rock 2” generated new interest in school music programs among students between the ages of 8 and 18. The survey of 1,800 students found that 31 percent more students wanted to participate in school music activities due to these shows.[1] Likewise a 2010 poll conducted by NAfME and published by The Boston Globe found that 43 percent of choral instructors gave the show "Glee" credit for the increase in student auditions for school music groups.[2]

This growth in popular styles can also be seen at the university and collegiate level. Due to increased enrollment in CCM degree programs, current job descriptions for choral and vocal teachers in higher education are seeking candidates that are knowledgeable in diverse vocal

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[1] Stephanie Chen, “The ‘Glee’ effect: Singing is cool,” Cable News Network, http://www.cnn.com/2010/LIVING/11/15/glee.effect.show.choir.comeback/index.html (accessed August 10, 2013).

[2] National Association for Music Education, “Glee: Making a Difference for America’s Music Education?” NAfME, http://musiced.nafme.org/news/press-releases/press-release-glee-making-a-difference-for-americas-music-students/ (accessed August 10, 2013).

techniques and CCM. Colleges and universities are also adding popular vocal pedagogy courses into the degree requirements for undergraduate music education students. "Because of the increasing demand of students desiring a [musical theatre] degree, many colleges, universities, and conservatories have begun to offer degrees in [musical theatre] and commercial music. In such schools, the singing teacher who has been teaching classical vocal production is also often expected to teach CCM styles."[3] This increase in demand has led some institutions to add degree programs in the area of CCM without a qualified instructor. Such situations pose the need for more teachers to be specialized in vocal production such as CVT that encompasses the entirety of the vocal instrument.

Lack of training in CVT has been shown in a 2003 survey sent to professional vocal teachers, who attended the CCM Vocal Pedagogy Institute at Shenandoah Conservatory. These teachers worked in private voice studios, colleges, and universities and were expected to be knowledgeable and teach CCM styles such as musical theatre. It was found that 34 percent of university faculty respondents teaching CCM had neither professional nor university training in this area. A follow-up survey was conducted every summer for three years with voice professionals who attended the same institute. The survey consisted of questions regarding performing and teaching experience, knowledge of voice science and medicine, and terminology regarding CCM styles. Results indicated that respondents desired knowledge in the areas of vocal science as it pertains to practical use in all CCM singing styles, availability of organized and consistent vocal production information for CCM, and training to learn healthy vocal

[3] Edrie Weekly, and Jeannette Lovetri, "Follow-up Contemporary Commercial Music (CCM) Survey: Who's Teaching What in Nonclassical Music," *Journal of Voice* 23 (2009): 367-375.

production in CCM styles. Furthermore, teachers considering themselves to be trained in CCM acquired training largely in the form of workshops or seminars. Very few individuals had extensive training with a recognized authority in the field of CCM teacher training.[4]

It is apparent through this research that there is a general lack of knowledge amongst teachers concerning the vocal mechanistic changes between CVT and traditional *bel canto* technique discussed in the previous chapter. However, over the past thirty years, scholars and vocal pedagogues have begun examining these changes. In particular Jo Estill, vocal scientist and vocal specialist, examined controllable parts of the vocal tract and their relation to six voice qualities utilized in CCM. Although specific training of vocal qualities has been useful in the teaching of CVT, there is limited research on their usage in the choral setting. This chapter will provide a brief introduction to the outgrowth of CVT from technological advances, the main tenets of CVT related to *bel canto* tenets, a description of Estill's six vocal qualities, and vocal mechanistic changes associated with those qualities.

A Brief History

When examining the development of CVT it is important to first understand the influence of folk music, African American "call & response" music, and English ballad traditions on CCM. Just as the methodologies and singing within the *bel canto* tradition continue to evolve, so too have styles associated with the vernacular use of language that have grown out of folk styles. Each of the aforementioned traditions utilized conversational vernacular style for the purpose of

[4] Edrie Weekly, and Jeannette Lovetri, "Follow-up Contemporary Commercial Music (CCM) Survey: Who's Teaching What in Nonclassical Music," *Journal of Voice* 23 (2009): 367-375

story telling and expression.[5] From these traditions many genres of vernacular secular music developed throughout the twentieth and twenty-first centuries of American history. The creation of new genres and concurrent technological developments brought about new vocal qualities associated with electronic instruments and the microphone. "Just as classical vocal traditions reflect Western European musical traditions and are constantly evolving, microphone idioms also reflect a history and the confluence of cultural and technological developments. Vocal and stylistic approaches reflect those developments."[6] In her book entitled, *A Versatile Vocalist: Singing Authentically in Contrasting Style and Idioms*, Rachel Lebon provides a chronological overview of the evolution of vocal technique and stylistic changes brought on by such cultural and technological developments. Utilizing her research there are a few salient points that will be useful for the reader. The invention of the microphone allowed for a style of singing not solely focused on vocal projection associated with the western classical tradition and belting produced by such artists as Ethel Merman. Instead this development furthered the growth of vocal technique requiring a variety of vocal colors and qualities that were more intimate and conversational.

Lebon goes on to describe the changing vocalism throughout history from the Big Band Era to the commercial sounds associated with the radio and television of the 1950s. Concurrently the development of Rock 'N' Roll and electric instruments further influenced the vocal output to be more aggressive and louder. In 1970, vocalism reflected the secularization of gospel music

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[5] Daniel Zangger Borch, *Daniel Zangger Borch's Ultimate Vocal Voyage: The Definitive Method for Unleashing the Rock, Pop or Soul Singer within You*, trans. Craig Pratt. (Sweden: Notfabriken, 2005), 39.

[6] Rachel L. Lebon, *The Versatile Vocalist: Singing Authentically in Contrasting Styles and Idioms* (Lanham, MD: Scarecrow Press, 2006), 1.

with the development of "soul" which utilized vocal slurs, growls, and falsetto. In 1980, "Gospel continued to exert a profound influence on all idioms. Whitney Houston, Gloria Estefan, and Mariah Carey, tapped into the entire vocal range at high-intensity levels."[7] Additionally, the music video industry brought new attention to choreography, at the expense of the vocals, and introduced computerized instrumental tracks and auto-tuned performances associated with studio recordings. It should be noted that *bel canto* technique was influenced in a similar manner as orchestras were playing at a higher tuning pitch level and larger concert halls and orchestrations created a need to expand the basic techniques of the time.

As technology continues to advance, singers should be flexible in creating healthy vocalism that reflects that growth and is authentic to the style. As in the past, technology will continue to influence contemporary singing styles and promote a new demand for learning related vocal qualities. This brief history showcases the vast changes in vocalism throughout the twentieth century in regards to CCM. Although much of this history is based on the usage of the microphone, these various qualities can be learned without a microphone. It is also important to understand that no one quality is exclusive to any genre; instead vocal qualities and elements overlap between styles.[8] In addition, the basic tenets of *bel canto*, discussed in the previous chapter, are also utilized in CVT with varying vocal mechanistic changes found within each quality. An understanding of the mechanistic changes can help students become more versatile singers. "…in the last few years, consistent evidence has emerged that, conversely, acquiring a good technique and facility for singing in a variety of idioms and throughout the range (speech

[7] Ibid., 4-5.

[8] Donna Soto-Morettini, *Popular Singing: A Practical Guide to Pop, Jazz, Blues, Rock, Country and Gospel* (London: A & C Black, 2006), xi.

range, mid, and upper registers) permits the singer to perform classical pieces quite successfully."[9] It is for this reason that the basic CVT tenets correlate with the tenets of *bel Canto* style: "…adjusting the vocal tract through coupling of the resonators and articulators and the management of breath and airflow are among the changes that confront the vocalist crossing over."[10]

Main Tenets of CVT and its Relation to Contemporary Vocal Science

Although research is still young in the area of CVT, scholars have found specific tenets that correlate with the main pillars of *bel canto* technique: breath, onset, and resonance. These pillars allow vocal/choral educators to teach from foundational tenets present in all vocal technique. Soto-Morettini describes these tenets as the source of power (alignment, breath), the source of sound (vocal folds and onset), and sound manipulation (pharynx, vocal tract, resonators, articulators.).[11] When correlating *bel canto* and CVT, these are the key components of sound production in all styles. Students can explore the similarities and differences of these tenets to further their understanding of the vocal mechanism, vocal qualities, and associated resonant sounds and sensations.

Breath Management

The first of these tenets and perhaps the most significant to all healthy singing is the learning of proper breath management. In the current CCM literature there are varying viewpoints on the teaching of breath management. Some vocal pedagogues do not spend a considerable amount of time teaching breath management to students. Soto-Morettini believes

[9] Ibid., 84.

[10] Ibid., 52.

[11] Ibid., 22.

that concentrating on the particulars of "correct breathing" can sometimes create tensions and "over-breathing." She maintains that breathing is instinctual and suggests utilizing imagery to help students anchor and contract muscles needed for producing large sounds[12] However, she agrees with modern vocal science and the *bel canto* tradition that clavicular breathing is not an efficient breathing technique. Furthermore she differentiates breathing for classical singing and contemporary singing; yet her description of breathing for contemporary singing correlates with the muscles of *appoggio*. This showcases the amount of confusion surrounding breath management.

> Unless you are training in classical repertoire, or have a very specific problem with capacity, or find yourself cast in one of those Gilbert and Sullivan roles, try to breathe with your thoughts…stay in touch with those stomach, back, and ribcage muscles and try to never raise your shoulders when breathing.[13]

Other CVT specialists believe that breath management is essential to all vocal teaching regardless of the genre or style. "[T]he necessity to maintain pitch is common to all styles and voice qualities. This requires airflow and balanced air pressure."[14] As with the *bel canto* style, Kayes agrees there are three factors that affect our breath in singing: changes in subglottic pressure, changes in the configuration of the vocal tract, and demands of musical style and text.[15] These various changes produce a variety of vocal qualities, and should be learned. In order for students to maintain breath function for singing they should begin with understanding the musculature involved. Although research is limited as to which breathing techniques are most desirable in the creation of certain vocal qualities, students should understand the importance of

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[12] Ibid., 23.

[13] Ibid., 25.

[14] Kayes, *Singer and the Actor*, 28.

[15] Ibid., 28.

a low anchored breath. Even subtle variations and conscious control of the lower breathing apparatus associated with *appoggio* can help reduce vocal tensions.

Many contemporary vocal pedagogues agree that proper breath management results in healthful singing and should become a conscious act. "Breathing is one of the most important regulatory tools at a singer's disposal. Good breathing strategy will allow you to deliver air to your laryngeal muscles with finely tuned flow and pressure. It is also a prerequisite for long term vocal health."[16] Borch differentiates passive breathing, breathing used for daily life, from active breathing, breathing used to consciously regulate airflow and pressure. In addition, he agrees with the *bel canto* principle of a noiseless inhalation in which singers have the vocal folds abducted prior to inhaling. In regards to the muscles used in breathing, Borch concentrates on control versus support. This can help students understand the need for conscious breath management.

> A common misconception about support is that your abdominal, back, and intercostal muscles should be rock hard and you should give it all you got! However, it is actually more a question of control, as is the case with all techniques, more effort is required for learning than when you mastered it. In order for your breathing to provide support, air must be delivered to your larynx with exactly the right pressure for the required note. Muscles that work too hard hinder the process rather than help it and are not considered supportive…Something to consider when dealing with support is utilizing some of the muscles for inhalation even when exhaling.[17]

Lebon advocates for breath management that prepares for and relates to the music's phrasing and intention. "Inhalation should also be in proportion to the phrase and be a part of the

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[16] Borch, *Daniel Zangger Borch's Ultimate Vocal Voyage: The Definitive Method for Unleashing the Rock, Pop or Soul Singer within You*, 32.

[17] Ibid., 34.

rhythm and prosody of the words and music."[18] In regards to microphone singing she warns against the tendency to "over inhale." "In medium-dynamic ballads or up-tempo tunes with comparatively short phrases, the inhalation need not be much more than in speech."[19]

Jan Sullivan, voice scientist and teacher of belt quality, believes that "in proper breathing, the waist area is expanded and the rib cage is expanded and suspended. However, an under-expanded rib cage, and over-expanded upper abdomen should be avoided."[20] She agrees with Borch that breath management should be taught as holding the inhalation musculature against the exhalation musculature. However she warns against holding the breath.

> "[Holding the inhalation musculature] infers that the muscles are held, not the breath. It is in this position that singing will take place. Sometimes while supporting in this way, a singer will feel as if he is holding his breath, and cannot take a breath. He feels that if he does breath, the entire suspension of the ribs will collapse. Once this feeling is overcome the singer realizes that, to his amazement with his ribs suspended, he is able to breathe easily at any time, almost unnoticed."[21]

Furthermore, she describes that only a small amount of air is needed to produce a sound. "The reason for a deep full breath is to ignite the support mechanisms."[22]

Seth Riggs, CCM vocal instructor, believes breathing for singing should be a relaxed process and that there is no need to strengthen breath muscles through exercises. In addition he agrees that very little air is required to produce a good tone and advocates for a balanced

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[18] Lebon, *The Versatile Vocalist: Singing Authentically in Contrasting Styles and Idioms*, 20.

[19] Ibid., 67.

[20] Jan Sullivan, *The Phenomena of the Belt/Pop Voice* (Denver: Logo Ltd, 1985), 65.

[21] Ibid., 67.

[22] Ibid., 67.

approach similar to *appoggio*, supporting the notion that over breathing is detrimental to healthy singing.

> "Even for a loud tone, the amount of air you use need only be enough to *support* the vibration of your vocal folds – no more, no less – so that your tone is produced without any effort or strain. Just as trying to control your breathing muscles directly will cause your vocal folds to jam up, so will using too much air…You know you have proper breath support when there is a *balance* between air and muscle. There will be a mutual and simultaneous coordination of the proper amount of air with the proper adjustment of your vocal cords."[23]

Surprisingly little air is needed to make the vocal folds vibrate properly. Instead of focusing on the amount of inhaled breath, focus should be placed on the suspension of breath; maintaining the inspiratory sensation. This supports the notion that singers should not over-inhale, but only take in the amount of air needed to complete a musical phrase. Although there is disagreement amongst scholars in regards to proper breath management for singing, it is evident that teaching of breath management is an important component for healthy singing in all styles. Understanding the various aspects of breath management allows students to become aware of varying breath pressure, airflow, and onsets found within all genres of music.

Breath Pressure, Airflow, and Onset

There are an unlimited number of sound variations that can be achieved with changes in breath pressure, airflow, and onset. Just as with a synthesizer, every sound has an envelope, and by changing any aspect of that envelope a variety of sounds can be created. In singing, adding significant breath pressure, without changing onset or resonance, can result in effortful singing that in time can harm the voice. Changes in airflow can produce a "breathy" or more "pressed"

[23] Seth Riggs, and John D. Carratello, *Singing for the Stars: A Complete Program for Training Your Voice*, Rev. ed. (Van Nuys, CA: Alfred Publishing, 1998), 27.

sound. Likewise, onsets can vary depending on the vocal quality desired. Although all vocal qualities require the same balanced setup associated with *appoggio,* CVT utilizes all three forms of onset: aspirate, balanced, and glottal; all onsets are used depending on the genre being performed. For instance, an aspirate or glottal onset can be used for effect or expressive purposes in gospel, rock, pop, or jazz genres. Kayes agrees that an understanding of efficient breath use, associated with balanced onset, is important, but that students must be able to manipulate it to either end of the spectrum. "The main conclusion is simply that our breath use cannot feel the same all the time. What is required for efficient breath use in singing is a flexible and muscular breathing apparatus that will allow the breath to work appropriately according to the vocal task."[24] In this regard, subtle changes are required for varying vocal qualities, yet we need not change the entire vocal setup in order to achieve this result.

If we consider the vocal quality most differentiated from *bel canto*, the belt quality, we notice distinct differences in breath pressure and vocal fold adduction. "Belting and operatic [singing techniques] differed with respect to subglottal pressure, glottal adjustment, and articulation …belting…seemed characterized by a high larynx position."[25] Estill measured the glottal behavior between these two qualities. Results indicated that belt quality was associated with the longest closed quotient of the vocal folds, high muscle activity of the vocalis and extrinsic muscles, a change in laryngeal posture from classical singing, and a cricoid tilting anteriorly. In belt quality "the effort was made to reduce the size of the pharynx to achieve the brightest and most brilliant sound and no attempt was made to lower the larynx to darken the

[24] Kayes, *Singing and the Actor*, 38.

[25] Johan Sundberg, Patricia Gramming, and Jeanette Lovetri, "Comparisons of Pharynx, Source, Formant, and Pressure Characteristics in Operatic and Musical Theatre Singing," *Journal of Voice* 7, no. 4 (1993): 309.

tone."[26] Robison *et al.* agree that there is more muscular effort involved with belt quality. Although the qualities are quite different, my goal is to show that by changing just breath pressure and not the breath aperture we can healthfully vary the sound quality. As is stated in the following quote, the lower abdominal muscles are utilized in both types of singing, creating breath pressure, but a different rate creates a variation in pressure thus creating a different quality. By merely changing one tenet vast variations in quality can be created.

> In belt, the lower abdominal muscles contract at a slower rate than in classical singing. Because the lungs release air more slowly in belt mode, subglottal air pressure is necessarily higher. In addition, greater muscular effort is put forth to hold the vocal folds closed longer in each cycle.[27]

The same can be said for variations of vocal register. Perhaps the greatest criticism of the belt quality is the predominant use of the chest register throughout the range. However, CVT research examines the vocal tract shaping and vocal health characteristics associated with belt quality. With the proper combination of breath pressure, laryngeal, and glottal changes belt is not unhealthy. Instead it is merely varying components of the mechanism in regards to breath and resonance. Vocal pedagogues McCoy, Edwin, Sullivan, and Estill believe that although belt quality is chest voice dominant it is not merely chest voice singing or pushing the chest voice into the higher register.

> Contrary to the very sincere belief of many singing teachers, belting is not inherently unhealthy, nor is it accomplished by simply driving the full weight of the "chest voice" as

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[26] Jo Estill, "Belting and Classical Voice Quality: Some Physiological Differences," 40-42.

[27] Clayne W. Robison, Barry Bounous, and Ross Bailey. "Vocal Beauty: A Study Proposing its Acoustical Definition and Relevant Causes in Classical Baritones and Female Belt Singers." *The NATS Journal* 51 (1994): 19-30.

high up the scale as possible.[28]

> It's important to note here that belting, though chest voice dominant, is not chest voice singing. As a matter of fact, the primary reason classical singers experience difficulty trying to belt is that they mistakenly carry their chest voice (rather than a chest-head voice mix) up through and past the lower passaggio with a classical vocal posture that includes a low larynx, a wide pharynx, an elongated mouth position, and full spectrum vowel sounds.[29]

> Belt is **not** chest voice. If the chest voice is mistakenly used and carried up into the high range and is taught as Belt, the vocal instrument **will** be ruined. Chest voice is a classical technique and belongs with that field of singing.[30]

> Regarding the concept that belting is merely "chesting" into the higher range, i.e., belting on high notes is merely "chest" or speech quality carried into the upper register: if speech quality in the lower range is equivalent to "chest voice," then belting is not chest voice extended into the upper range.[31]

Resonance

Variations of resonance between *bel canto* quality and CVT are just as infinite as changes in breath pressure and airflow. For instance if singers only vary the laryngeal position, and not breath or onset associated with *bel canto*, sounds will shift between bright and dark. However, the teaching of resonance, in regards to CVT and vocal health, has been a highly debated topic among vocal teachers and pedagogues. Seth Riggs purports that "…no attempt should ever be made to 'brighten' or 'darken' the tone. Singers should always maintain a clear tone with a

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[28] McCoy, *Your Voice: An Inside View*, 156.

[29] Robert Edwin, "Belting 101, Part Two," *Journal of Singing* 55, no. 2 (1998): 61.

[30] Sullivan, *The Phenomena of the Belt/Pop Voice*, 7.

[31] Jo Estill, "Belting and Classical Voice Quality: Some Physiological Differences," *Medical Problems of Performing Artists* 3 (1988): 42.

normal speech-like depth."[32] Davids and Latour agree that popular and musical theatre singing should utilize speech-like vowels in order to create a brighter sound that enhances the second and third formant frequencies. Working from speech level can help singers become aware of variations in resonance in comparison with *bel canto* in a healthful manner. Speech level singing also depends on the vibratory mode of the vocal folds described as slack (vocal fry), thick (short folds or chest voice), thin (elongated folds or head voice), or stiff (no full contact or falsetto).

> "The different vibratory modes of the true vocal folds can be explained by the Dynamical Systems Theory. The complex mechanical interplay of **body** and **cover** as the length of the true vocal folds changes (via contraction of the thyroarytenoid and/or cricothyroid), together with the aerodynamic influence of the breath, results in different vibratory modes, gears or registers…In Estill Voice Training™, the challenge is to learn how to maintain the conditions that produce a given vibratory mode *beyond* the frequency of its attractor state."[33]

Estill's research helps educators understand the variation in vocal fold conditions from the mechanistic changes that occur. In this way the breath setup remains unchanged, yet with subtle changes in the vocal mechanism singers can alter the quality and therefore the resonance in a variety of ways. Furthermore, working with all variations in resonance can help students develop a kinesthetic and aural understanding of these differences; in turn perhaps helping students maneuver through the range to find the balance associated with *bel canto* quality more easily. No matter the vocal styling or demands, care must be taken to maintain proper resonance within each quality.

> Popular and musical theatre vowels should be pronounced as if the vowels are spoken, which generally means that there should be more mouth resonance than pharyngeal

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[32] Riggs, *Singing for the Stars: A Complete Program for Training Your Voice*, 80.

[33] Jo Estill, *Estill Voice Training Level One: Figures of Voice Control*, ed. Mary McDonald Klimek, Kerrie Obert, and Kimberly Steinhauer, (Pittsburgh: Estill Voice Training Systems International, 2005), 43

> resonance. For example, for [u] the jaw should be a bit more closed in the back to reduce pharyngeal resonance, plus there should be special attention to the vertical space in the mouth. In addition the lips should be less rounded. All of this creates a brighter sound that is less operatic.[34]

It has often been stated that balanced resonance constitutes healthy vocal production. However, aforementioned technological changes such as the microphone caused a shift in vocal projection and resonance that differed from classical ideals. Lebon discusses such changes in resonance that are required when switching between classical and CCM: "On microphone, [students should] reorient tone focus toward middle voice placement, in addition to the oral resonance that microphone amplification affords. After using head voice resonance predominately in classical singing, you're inclined to revert to a higher vertical placement reflexively, with more air flow."[35] The microphone allows the vocalist to change aspects of breath and resonance while maintaining audibility and vocal health.

Without working from these ideas of resonance, tensions and vocal fatigue can result from misusing muscles within the mechanism. However, working from an understanding of the vocal mechanism, singers can alter the sound from bright to dark healthfully with or without a microphone. In regards to Estill's research, a twang or belt quality is associated with bright resonant qualities and the opera quality is produced with a more balanced resonance associated with *chiaroscuro* in the *bel canto* technique. In achieving these qualities it is important to understand changes in resonance related to vocal tract movement. Sundberg demonstrated that timbral qualities, specifically in belt, do not result from anatomical or physiological differences

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[34] Davids and Latour, *Vocal Technique: A Guide for Conductors, Teachers, and Singers*, 98-99.

[35] Lebon, *The Versatile Vocalist: Singing Authentically in Contrasting Styles and Idioms*, 67.

but reflect movements or positions within the vocal tract itself.[36] As was stated in the previous chapter, adjusting the vertical position of the larynx can alter the sound: the shorter the length the more *chiaro* or brighter the sound, the longer the length the more *scuro* or darker the sound. Vocal health need not be compromised when changing the vocal tract length.

> "It is not necessary to lower the larynx for healthy voicing. A high larynx is essential for some of the voice qualities currently used in musical theatre - notably twang and belt. Raising the larynx will also give you easier access to the notes at the top of your range."[37]

As was shown through research subtle changes within the vocal mechanism can alter the quality without having to alter the entire mechanistic setup. Instead the singer must become knowledgeable in regards to which components need to be manipulated. Sundberg *et al.* examined the comparisons of pharynx, formant, and pressure characteristics in operatic and musical theatre singing. Acoustic and phonatory characteristics were measured in three singing styles: operatic, mixed, and belt. Results indicated that operatic and mixed singing styles were characterized by moderate subglottal pressures and glottal adductive forces. However, in operatic singing the formant frequencies suggested a moderate degree of jaw opening and a lowered larynx, whereas in mixed singing the formant frequencies suggested a wide jaw opening and raised larynx. Belt was produced with high subglottal pressures and greater adductive forces, and the formant frequencies suggest a wide jaw opening and an elevated larynx.[38]

Formant frequency also plays a role in the variance between opera and musical theatre

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[36] Johan Sundberg, Patricia Gramming, and Jeanette Lovetri, "Comparisons of Pharynx, Source, Formant, and Pressure Characteristics in Operatic and Musical Theatre Singing," *Journal of Voice* 7, no. 4 (1993): 301-310.

[37] Kayes, *Singing and the Actor*, 24.

[38] Sundberg, Gramming, and Lovetri, "Comparisons of Pharynx, Source, Formant, and Pressure Characteristics in Operatic and Musical Theatre Singing," 309.

singing. Björkner found that musical theatre singers have a weaker voice source fundamental frequency and higher formant frequencies, and that musical theatre singers used a phonation mode that was more pressed than opera singers.[39] This reflects the articulatory variances between the two styles and the anatomical differences that cause timbral and formant changes between the styles. Story *et al.* examined the relationship of vocal tract shape and three vocal qualities: normal, yawny, and twangy. Results showed that for yawny productions the oral cavity was widened and the tract lengthened, whereas for the twangy vowels the oral cavity was slightly constricted, with a widened lip opening, and the tract was shortened. In addition the acoustic characteristics of the first two formants (*F*1 and *F*2) were close together for yawny vowels and far apart for all the twangy vowels.[40]

This again shows that CVT can be taught from an understanding of the *bel canto* tenets. By effecting change in only one component of the vocal tract, the velum or the aryepiglottic sphincter (AES), and not the tenets of breath and onset, the quality can change. In regards to AES narrowing, research has examined the distinct difference between nasal twang and oral twang. Yanagisawa *et al.* found that oral twang was generated by constriction of the AES and acoustically was characterized by an increase in amplitude of the partials in the 3-kHz area of the spectrum. This spectral area is "associated with the 'ringing' sensation of 'good' opera quality or of a vocal tone that projects".[41] A subsequent study by Kmucha *et al.* investigated the role of

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[39] Eva Björkner, "Musical Theatre and Opera Singing – Why so Different? A Study of Subglottal Pressure, Voice Source, and Formant Frequency Characteristics." *Journal of Voice* 22, no. 5 (2008): 533-540.

[40] Brad H. Story, Ingo R. Titze, and Eric A. Hoffman, "The Relationship of Vocal Tract Shape to Three Voice Qualities," *Journal of Acoustical Society of America* 109, no. 4 (2001): 1651-1667.

[41] Eiji Yanagisawa, Steven T. Kmucha, and Jo Estill, "Role of the Soft Palate in

AES constriction and widening. "The concept of a lowered larynx is believed to be beneficial to healthy voice production. However, merely lowering the larynx will assure only that the vocal tract will be longer and the tone 'covered,' i.e., darker and softer. These are not the conditions displayed by these subjects for a ringing tone of high intensity produced with an elevated larynx and constricted AES."[42] Further results indicated that learning the techniques of internal laughing, AES constriction, and control of the phonatory duration by the true vocal folds allows for a high-intensity vocal output without fatigue or stress to the vocal mechanism.[43]

The aforementioned research showcases the various changes within the vocal tract that when changed produce alternate qualities. An important aspect to keep in mind when working with amateur singers is to combat their natural tendencies towards constriction and extreme laryngeal movement when singing pitches in the extremes of their register.

> Vocally untrained and inexperienced singers tend to apply habitual speech coordinations to singing. In pitch areas and volume levels that are nearest to habitual conversational speech, the larynx usually is not raised or lowered very much, and the vocal tract not expanded very much. But as pitch and volume increase, inexperienced singers tend to raise their larynges, narrow their vowel tracts, and increase laryngeal effort to degrees that do not represent optimum physical and acoustic efficiency. [44]

Although elevated laryngeal placement can be healthy and necessary for producing

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Laryngeal Functions and Selected Voice Qualities: Simultaneous Velolaryngeal Videoendoscopy," *Annals of Otology, Rhinology, and Laryngology* 99, no. 1 (1990): 18-28.

[42] Steven T. Kmucha, Eiji Yanagisawa, and Jo Estill, "Endolaryngeal Changes during High-intensity Phonation: Videolaryngoscopic Observations," *Journal of Voice* 4, no. 4 (1990): 352.

[43] Ibid., 353.

[44] Leon Thurman et al., "Singing Various Musical Genres with Stylistic Authenticity: Vocal Efficiency, Vocal Conditioning, and Voice Qualities," In *Bodymind & Voice: Foundations of Voice Education,* ed. Leon Thurman, and Graham Welch, Rev. ed. (Minneapolis: The Voice Care Network, 2000), 519.

specific vocal qualities, amateur singers should also simultaneously learn the balanced laryngeal placement associated with *bel canto* technique.[45] This will allow students to produce all vocal qualities from an understanding of the main tenets and work outward to other qualities. Furthermore, learning multiple vocal qualities allows students to explore more areas of vocal production. "Singers must work the [cricothyroid] muscles as well as the [thyroarytenoid] muscles…one must develop the instrument as a whole. Singers should develop all of those sounds as well as a variety of resonances". [46] Kayes agrees and states, "By learning the muscular 'set-up' in the vocal tract for certain clearly defined qualities you can develop greater control over your own sound. This is useful in character work, for creating vocal colours, and for changing vocal style."[47] In this regard, students can enhance both knowledge and ability by learning the traditional tenets of *bel canto* and shifts of one or more components within any tenet to achieve a healthy vocal quality associated with CCM.

Vocal Qualities

Although teaching vocal technique through the study of vocal qualities is relatively new, contemporary vocal pedagogues believe it can help singers become more versatile. As previously mentioned, through the research of Jo Estill and Johan Sundberg, teachers have been able to understand the mechanistic and resonant changes associated with various vocal qualities. Changes in size and position of the pharyngeal width and height, velum, vocal fold mass, aryepiglottic sphincter, tongue, and neck were shown to contribute to differences in the sound

[45] It should be remembered that the larynx should not be forcibly held in an extremely high or low position; instead it should remain flexible.

[46] Robert Edwin, "Belt is Legit," *Journal of Singing* 64, no. 2 (2007): 214.

[47] Kayes, *Singing and the Actor*, 153.

spectrum of four vocal modes: modal quality, sob, twang, and opera.[48] Estill's research grew to incorporate thirteen components, or figures, of the vocal mechanism that can be changed to produce various vocal qualities. She then created six distinct vocal quality recipes based on a specific combination of these thirteen figures: speech, falsetto, cry/sob, twang, opera and belt.[49]

> Traditional voice training systems see the voice as something emanating from one particular mode of production, which moves from a lower register to an upper register with a break or 'passaggio' in between. By breaking down our analysis of vocal sound into various qualities, we can see the voice as capable of moving through that same range, but producing distinctly different kinds of sounds throughout.[50]

Some pedagogues have discussed vocal qualities with different names, but still give credit to Estill's research in this area. Soto-Morettini utilizes the following names: neutral thin [cry], neutral thick [speech], aspirate [falsetto], elongated [opera], twang and belt.[51] For the sake of this document Estill's original six vocal qualities will be discussed. The following discussion of these six vocal qualities relies on work by Gillyanne Kayes, a vocal trainer in the UK, who synthesized Jo Estill's qualities in *Singing and the Actor*.[52]

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[48] Raymond H. Colton and Jo Estill, "Elements of Voice Quality: Perceptual, Acoustic, and Physiological Aspects," in *Speech and Language: Advances in basic Research and Practice,* Volume 5 (Academic Press: New York, 1981), 311-403.

[49] Jo Estill, *Estill Voice Training Level Two: Figure Combinations for Six Voice Qualities*, ed. Mary McDonald Klimek, Kerrie Obert, and Kimberly Steinhauer (Pittsburgh: Estill Voice Training Systems International, 2005), 4.

[50] Soto-Morettini, *Popular Singing: A Practical Guide to Pop, Jazz, Blues, Rock, Country and Gospel*, 30.

[51] Ibid., 48.

[52] Kayes was cited here since the primary source material from Estill's early research is still not accessible. However, chapter four utilizes a chart, shown in figure 3 that breaks down the recipes as it is taught in EVTS™.

Speech Quality

Speech quality utilizes a thicker vocal fold action (thyroarytenoid dominant) and involves high subglottic pressure. The larynx is in a mid-position with no thyroid tilt and the quality is "natural" as associated with vernacular speech.[53]

Falsetto Quality

Falsetto is a voice quality of intimacy and vulnerability, and is not associated with projection in CVT. Kayes describes this quality as characterized by a mid-laryngeal position, minimal subglottic pressure, and a raised vocal fold plane in which the vocal folds vibrate but do not fully close.[54] Estill calls this stiff vocal fold position. This can also be known as an aspirate quality.

This quality closely resembles Richard Miller's definition of feigned voice production combining slight laryngeal elevation and breath mixture.[55] Zemlin's describes this mechanistic change as the following:

> High-speed pictures of the larynx during falsetto production reveal that the folds vibrate and come into contact only at the free borders and that the remainder of the folds remains relatively firm and nonvibratory. Furthermore, the folds appear long, stiff, very thin along the edges, and somewhat bow-shaped.[56]

Cry/Sob Quality

Cry quality utilizes thinner vocal fold action (cricothyroid dominant) and involves lower subglottic pressure than in speech quality. However cry quality is more balanced than in falsetto

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[53] Kayes, *Singing and the Actor*, 157.

[54] Ibid., 157.

[55] Miller, *The Structure of Singing: System and Art in Vocal Technique*, 119.

[56] Willard R. Zemlin, *Speech and Hearing Science: Anatomy and Physiology*. 2nd ed. (Englewood Cliffs NJ: Prentice-Hall, 1981), 214.

quality. The larynx is in a mid or high position and the thyroid cartilage is tilted forward. A variation of this quality is the sob quality in which the larynx is in a lower position.[57]

Twang Quality

Twang quality can either be nasal or oral and can use thinner or thicker vocal fold action. Estill's twang quality utilizes thin vocal folds (figure 3). The larynx and tongue are in a higher position and this quality is characterized by a tightening of the AES. "Twang is edgy, brilliant, and piercing, and it can be added to other qualities to introduce the 'singer's formant' for ease of projection across the range."[58] A study by Yanagisawa *et al.* examined aryepiglottic narrowing and found similar results to Manuel Garcia's findings in 1855, which associated aryepiglottic orifice narrowing with brilliance, and softer tone with an open aryepiglottic orifice. Yanagisawa asserts that aryepiglottic constriction accompanies twang, belt, and opera qualities. This constriction is associated with a posterior movement of the epiglottis therefore narrowing the AES.[59] Research suggests that the "singer's formant" is also produced in this area of the larynx. However, Sundberg's results show that the "singer's formant" is associated with a low laryngeal position.

> [I]t is essential for the generation of the "singing formant" that the larynx tube act as a separate resonator the resonance of which is not affected by articulatory movements in the rest of the vocal tract. This is accomplished when the larynx tube opening is less than one-sixth of the cross-sectional area in the pharynx. Articulatorily, this effect is obtained by lowering the larynx which widens the pharynx cavity. Particularly at higher pitches where the larynx tube opening is wide it would be essential to acquire a wide pharynx.[60]

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[57] Kayes, *Singing and the Actor*, 158.

[58] Ibid., 158.

[59] Eiji Yanagisawa, Jo Estill, Steven T. Kmucha, and Steven B. Leder, "The Contribution of Aryepiglottic Constriction to 'Ringing' Voice Quality: A Videolaryngoscopic Study with Acoustic Analysis," *Journal of Voice* 3, no. 4 (1989): 342-350.

[60] Johan Sundberg, Articulatory Interpretation of the "Singing Formant". *Journal of*

Opera Quality

Kayes describes this quality as a "…mix of speech and twang but with a tilted thyroid and lowered larynx. Subglottic pressure will vary according to volume levels."[61] For the purposes of this document opera quality will be discussed in regards to the *bel canto* tradition rather than Germanic operatic technique. In this regard, exercises in chapter four will discuss strategies for learning *bel canto* quality, which utilizes a recipe of cry, speech, and twang qualities.

Belt Quality

Belt quality is a mixture of speech and twang qualities with higher vocal adduction and a longer closed phase quotient than other qualities. This accounts for subglottic pressure being the highest with this quality as compared to the other qualities. Furthermore, the larynx is in a high position and the cricoid cartilage is tilted.[62]

These vocal qualities are part of the Estill Voice Training System (EVTS™), which is separated into two courses. Throughout these courses students experiment with a variety of exercises to gain control over compulsory figures independently and in combination. These six basic vocal qualities are only the beginning of many combinations of mechanistic movement that the voice is capable of achieving in a healthy way. With the combination of balanced *bel canto* technique and study of vocal qualities that explore various spectrums of the vocal mechanism, students can begin to develop a more holistic vocal technique that is not limited to western classical singing.

Acoustical Society of America 56, no. 4 (1974): 842.

[61] Kayes, *Singing and the Actor*, 158.

[62] Ibid., 158.

CHAPTER 4

STRATEGIES FOR EXPLORATION AND IMPLEMENTATION OF CVT IN THE CHORAL REHEARSAL

As evidenced in chapters two and three, implementing CVT within the choral rehearsal is accomplished by developing a pathway between the *bel canto* tradition and CCM. Such a pathway is established through teaching the three main tenets inherent in all healthy vocalism: breath, onset, and resonance. Within the traditional classical paradigm, a balance within and between these tenets is desired. However, subtle changes within any one tenet can create varied vocal qualities usable in a variety of repertoire and CCM.

This is accomplished through an exploratory model Robert Edwin describes as "cross training," much like that of an athlete who must train more than one muscle group in order to optimize performance. Singers too should not be marginalized as only "classically trained" with only one specific vocal setup or vocal quality recipe. Instead they should be encouraged to develop an understanding of how to healthfully change components of the vocal mechanism to create a variety of qualities needed for diverse genres. "[C]lassically trained singers…lower the larynx, widen the pharynx, open the mouth, and lift the soft palate…cross training…would mean slightly raising the larynx, narrowing the pharynx and mouth opening, and allowing access to the nasopharynx by lowering the soft palate." [1] Cross training in this manner can enhance traditional teaching pedagogy as it helps students explore the entirety of the vocal instrument and train varied muscles groups without aesthetic bias.

This chapter will explore strategies that combine these main tenets of *bel canto* with the vocal qualities and mechanistic understanding pioneered by Jo Estill. Throughout the chapter

[1] Robert Edwin, "Cross Training for the Voice," *Journal of Singing* 65, no. 1 (2008): 73.

these strategies will be discussed in terms of the teaching of opposites. The *bel canto* tradition helps us achieve a balanced approach to singing, however in the choral classroom students have diverse singing abilities and qualities. Some will begin with a breathy aspirate tone; others will begin with a pressed constricted speech quality. Students can also have the presence of bright or dark, quiet or loud, and nasalized or non-nasalized qualities in their speech and singing. Even more so, some students will have prior vocal experience or training and have a set way of producing sound; others will have no vocal training or musical skills. Teachers can minimize this lack of experience by helping students understand and explore vocal technique and the entirety of sounds the vocal mechanism can produce. Having students understand the mechanistic difference on any given spectrum by first exploring sounds related to speech and then into singing can help achieve this outcome. In turn students are able to learn where they fit within the spectrum, explore the balanced mechanistic setup required for *bel canto* quality, and the sounds on either side of the spectrum associated with CCM.

Teachers can help students develop their knowledge of the vocal mechanism by exploring *bel canto* tenets with the compulsory figures of EVTS™ (see fig. 2). These figures include variations in anchoring (breath management and alignment), onset, vocal fold thickness, false vocal fold space, thyroid and cricoid cartilage tilt, AES width, laryngeal height, velum height, tongue placement, jaw movement, and lip movement.[2]

[2] It is highly recommended that a teacher take the Estill Voice Training courses with a certified course instructor prior to extensive work with these figures. This chapter focuses on the most prominent figures for vocal quality changes with exploratory strategies that are possible based on the *bel canto* tenets, Estill's research, and my personal experience with the system.

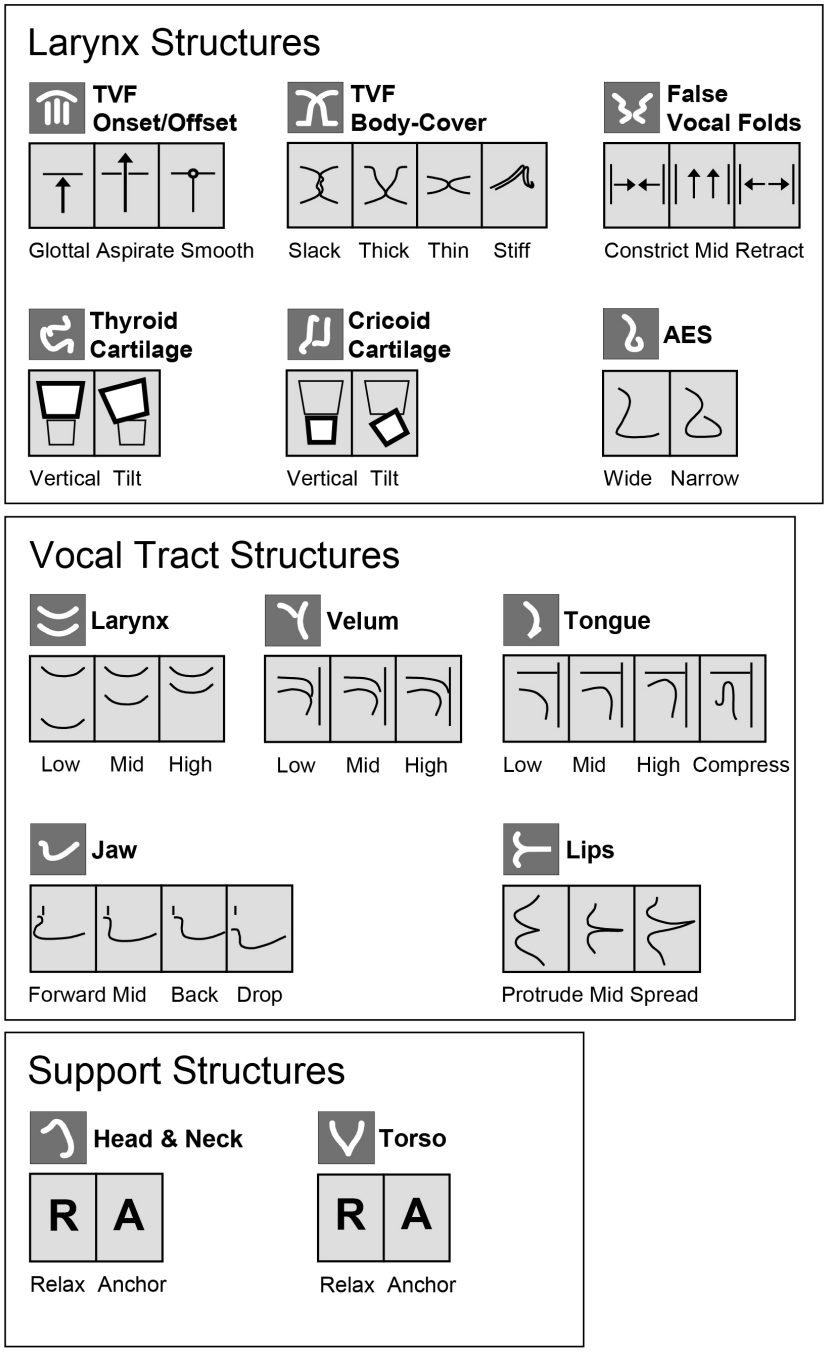

Figure 2: Compulsory figure components and symbols.[3]

Learning the variations within these figures independently can help students develop and apply a simple anatomical understanding to vocal technique in all genres. These figures can be

[3] Estill, *Estill Voice Training Level Two: Figure Combinations for Six Voice Qualities*, 4. Used with permission from Estill Voice International.

thought of as a summary of the singer's tools used to create a variety of sounds—both alone and in combination. Estill calls these recipes by the terms defined in figure 3. This concept is much like that of general contractors that are given the same set of tools, yet build very different houses; or fashion designers that are given the same fabric, yet develop very different garments. Variations within the vocal mechanism are a natural and organic part of human language, specifically non-linguistic sounds, which are in common across cultures. In an interview by colleague Gillyanne Kayes, Jo Estill described the "noises" that she produced in her workshops associated with non-linguistic sounds.

> Those noises are noise that we've made all our lives as children…All of the things we've done are the things that we learn, that we use, to learn to control these structures, and they're simple…And it's so easy to learn because you've already done it. You've already made all these noises in your life, but you didn't know what you were doing when you made them.[4]

These "noises" showcase the specific setups within the vocal mechanism that we already unknowingly perform. Building from this knowledge, students can begin to kinesthetically feel and label these changes within the mechanism associated with the three tenets. Changes within any one aspect can produce a variety of vocal qualities. However, students will find some components and qualities easier to produce than others; EVTS™ defines this as an attractor state.

> An *attractor state* is used in dynamical systems theory to describe a condition of stability during motor tasks. *Some* structures are naturally *attracted* to a specific condition at a given pitch or volume. For example, the condition of stability, or attractor state, for chest voice is low pitch, and the condition of stability, or attractor state, for head voice is high pitch. As the untrained singer moves up the scale in chest voice, the sound becomes unstable (voice cracks) and eventually gives way to a head voice at the higher pitches. The abrupt change of quality and conditions some singers experience between their chest

[4] Jo Estill interviewed by Gillyanne Kayes, "Jo Estill talks with Gillyanne Kayes," YouTube video, 4:17, Posted by "Vocalprocess," January 4, 2011, http://www.youtube.com/watch?v=_7h5XOUqcJA

> and head voice is one example of attractor states in action…Attractor states can be modified with training.[5]

Students also have personal attractor states that incorporate a certain setup of components within the vocal mechanism found within their speaking and singing voice. For example, a student might always speak or sing with a nasalized sound and high laryngeal position, and can find it difficult to move beyond these states. Therefore it is important to know what the student's attractor states are and then explore those components, alone or in combination, which the student finds difficult.

Estill then combined the compulsory figures to create six vocal qualities with specific recipes, which are examined throughout this chapter (see fig. 3).[6] Although Estill refers to two of the six qualities as falsetto and opera, for the purposes of this chapter aspirate and *bel canto* qualities, which have slightly different recipes, will be used. The name falsetto quality can be commonly mistaken for the countertenor singing quality in the male voice, which research is still examining. Instead, aspirate quality will be used to represent audible breath flow, stiff folds, and partial adduction of the vocal folds. *Bel canto* is used instead of opera due to the connection to the foundational elements of the *bel canto* tradition throughout this document with the goal of utilizing a different recipe from opera quality. The *bel canto* recipe varies from the opera quality by incorporating less AES narrowing, a more relaxed laryngeal position, and thinner vocal folds. As with all qualities, components should remain flexible as the singer moves throughout the range.

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[5] Estill, *Estill Voice Training Level One: Figures for Voice Control*, 7.

[6] It is important to note that there are many other qualities the voice can produce with various combinations or recipes of Estill's Compulsory Figures. This document only utilizes the basic Estill qualities that represent the most pure form of each quality.

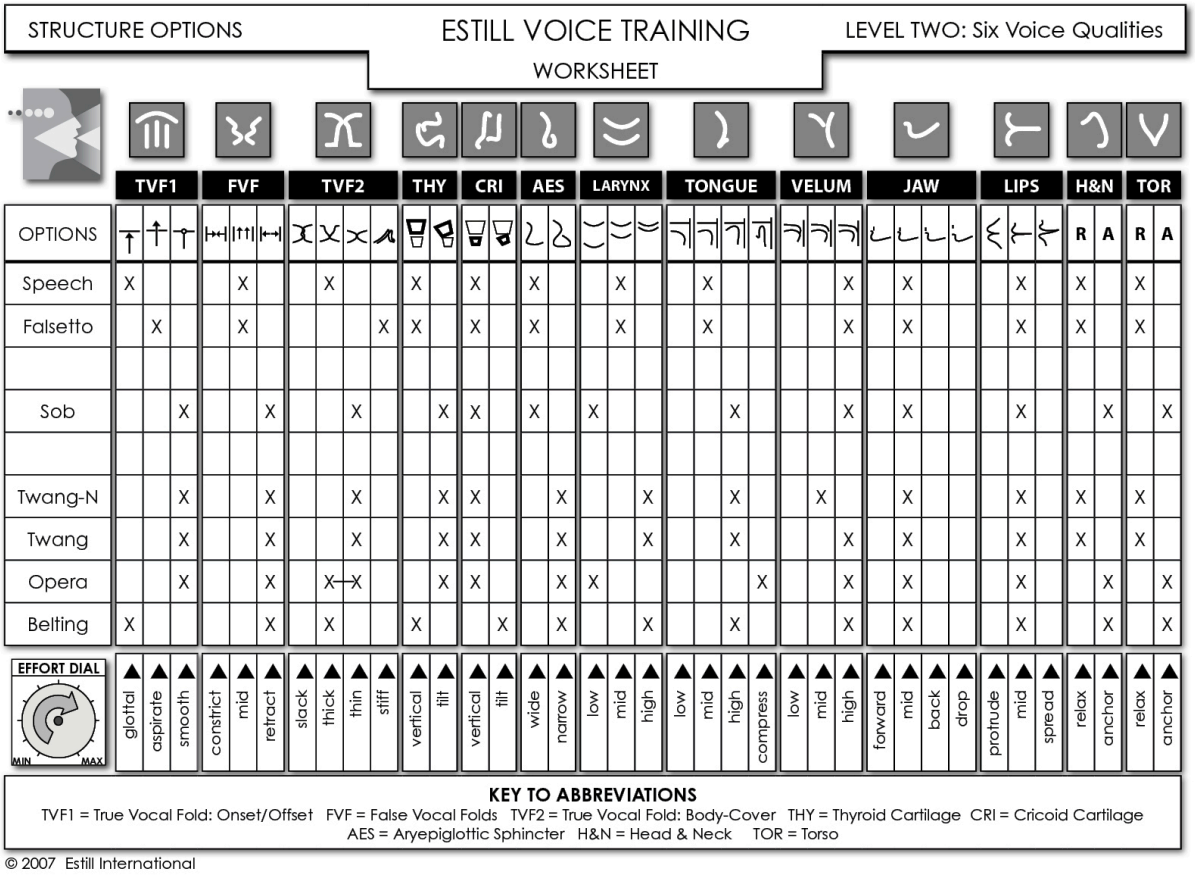

Figure 3. Voice qualities created from compulsory figure combinations.[7]

In creating the pathway between *bel canto* and CVT this chapter will discuss how to incorporate exploratory strategies in developing a broader understanding of vocal technique within traditional choral pedagogy. I will first discuss this connection through the processes of the vocal warm-up. We will then explore the need for students to develop an aural understanding and vocabulary associated with breath, onset, and resonance. A section will then discuss individual instruction within the group ensemble setting, which is necessary in teaching and assessing students throughout this process. This is followed by exploratory strategies in each of

[7] Estill, *Estill Voice Training Level Two: Figure Combinations for Six Voice Qualities*, 6. Used with permission from Estill Voice International.

the three main tenets of breath, onset, and resonance. Specific vocal qualities are discussed within each of the three main tenets where appropriate to identify the subtle change from the traditional *bel canto* paradigm. The chapter ends with a brief discussion on the implementation of vocal qualities into repertoire. Much of the exploration that follows can be taught by layering and building upon skills throughout the year within the entire rehearsal. This process should be directly related to the repertoire currently being studied and provide aural, musical, and vocal technique skill building.

The Warm-up, the Interrupt or Re-up, and Developing Layers

The warm-up is a significant part of the choral rehearsal as it encompasses warming up the vocal mechanism and learning of skills related to, but not limited to, aural awareness, breath management, onset, and resonance. The warm-up process also benefits the overall group sound when the warm-ups focus on the vocal technique associated with the repertoire being rehearsed.

> By engaging choral singers in simple tasks involving the production of supported, resonant vocal sounds, healthy singing concepts can be taught without conflicting with vocal technical terms learned in a solo singing context. Pedagogically, the method provides choral singers with a set of vocal tools for conquering singing assignments found in choral repertoires.[8]

Haasemann & Jordan agree that, "[w]hile the rehearsal procedure of the conductor and the choir is consistent, the content of the warm-ups is always different. Hence, vocal technique is much more interesting for the choir."[9] In the choral setting, teachers are often the only vocal instructors students have for learning proper vocal technique. However, some choral teachers do not include voice-building exercises in the rehearsal due to lack of knowledge or fear causing the students to

[8] Smith and Sataloff, *Choral Pedagogy*, 150.

[9] Frauke Haasemann and James M. Jordan, *Group Vocal Technique* (Chapel Hill, NC: Hinshaw Music, 1991), 6.

sing in an unhealthy manner.

> Some [choral conductors] refuse to employ any means to build voices. Either they consider such procedures to be unimportant, or they are afraid to use an exercise which is related to the singing process. Sometimes the choral director cloaks his own ignorance of the singing mechanism by dealing directly with the interpretive elements in a score and thus avoids any approach to the vocal problems of the individuals in the chorus…Finally, there are some who…utilize a great number of vocalises, devices, and methods…with the desperate hope that the tone of their chorus will somehow [improve].[10]

The exploratory exercises within this chapter can all be included in the choral warm-up, and should be layered in the order outlined. I recommend that all warm-ups be performed a cappella to promote the development of listening and audiation skills. Throughout the warm-up process the teacher can utilize vocal modeling and should incorporate individual and group feedback regularly. Rehearsal should begin with a physical warm-up in order to get the body ready for singing and encourage proper alignment. This includes, but is not limited to, physical stretching of the muscles of the shoulders, ribs, back, and neck. The teacher can then direct the group in breath management and activation exercises. I suggest that that teachers utilize a breath gesture associated with expansion of the rib cage and epigastric area, and that students use physical gestures associated with various parts of the breath mechanism throughout the warm-up. This can help students become aware of the physical sensations associated with the breath mechanism and connect to the conductor's gesture.

> The singing instrument requires considerably more time and a great deal of coordination to prepare than orchestral ones. Singers must hear the pitch, imagine the vowel shape, and prepare the breathing mechanism. The coordination of this set of activities in choral music is organized by the choral conductor's breath gesture. Unfortunately, not every choral conductor has been taught this basic skill.[11]

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[10] Howard Swan, *The Development of a Choral Instrument*, in *Choral Conducting Symposium*, ed. Harold A. Decker and Julius Herford (Englewood Cliffs, NJ: Prentice Hall, 1988), 25.

[11] Smith and Sataloff, *Choral Pedagogy*, 126-127.

Next, students should activate their voices with speech awareness and exploration exercises. “The warm-up process provides a transition between speaking and singing. The average choral singer has little recognition of habitual speech faults, breath flow, or articulatory tensions.”[12] Working with speech and developing an aural understanding of speech habits and mechanistic components that can be altered to produce optimal speech resonance can help students enhance their entire vocal technique. In the next portion of the warm-up, students can explore various onsets and vocal qualities with vocalises connected to the repertoire being rehearsed. The quantity of vocal exercises is not as important as the quality. I have found it beneficial for the amateur singer to first spend time on vocal exploration exercises listed throughout this chapter related to mechanistic movement in a their mid-range rather than beginning with extended vocal exercises. It is important for students to learn how to produce foundational elements of singing healthfully prior to singing advanced exercises. The warm-up should then also include vocalises that engage the ear, engage the body, and challenge students’ agility both with the breath and the mechanism while relieving tensions.

The end of the warm-up should include chordal and harmonic exercises to help students build aural skills and unified resonance within each vocal quality. This challenges students to listen within and across sections of the choir. Throughout the year together, teachers will be able create and utilize more advanced warm-ups that incorporate multiple skills in vocal technique and musicianship throughout the extremes of register and harmony.

When developing the warm-up process and rehearsal structure teachers should continue to focus on the foundational pillars discussed within this document: breath, onset, and resonance. This can be helpful in building the teacher’s awareness to the underlying vocal issues and

[12] Ibid., 153.

encourage the teacher to ask questions such as, “What am I hearing and what one main pillar or component can help fix multiple issues?” “Can the vocal issue be solved by a change in breath, onset, or resonance?” “Will a change in my breath or onset gesture help change the quality?”

In this way teachers should feel free to segue at any time in the rehearsal into what Geoffrey Boers, choral pedagogue and professor at the University of Washington, calls “interrupts” or “re-ups.” “Interrupts” are helpful when students are finding a section of a piece particularly difficult. Teachers can then pause and create an exercise or vocalise that helps students work on issues of vocal technique present within that specific section. “Re-ups” are useful when transitioning between repertoire that requires a different vocal set-up, such as classical to CCM. In this manner students perform vocalises and exercises that focus on adjusting a specific tenet, quality, or component of the vocal mechanism prior to singing the subsequent repertoire.

Before Sound

Prior to vocal exploration I have found it beneficial to begin the year, and subsequent rehearsals, developing a common language with students and building their aural discrimination skills. This is related to the NAfME national standards seven and nine and is best described as learning, listening, and analyzing “before sound.” James Jordan, professor of music education and choral scholar at Westminster University, suggests that choral educators have a natural bias towards what constitutes a “good or ideal sound”.

> “[E]ach of us, [choral teachers], will default to a predetermined lists of things to in a choral sound based upon our experiences and biases. I believe you can teach yourself to hear other textures, timbres, and colors outside the parameters or defaults determined by your own experiences, but to do that takes a certain amount of study and awareness of other possibilities in the aural textual world…Repeated listening and study of [exemplary

> recordings] can educate and inform biases regarding vocal tone and production, and that newfound information can be brought to bear on sounds during rehearsals."[13]

Students can have the same bias in regards to their own sound and can become self-conscious if a teacher refers to their sound as "bad" or "incorrect." It can be advantageous for a teacher to instead discuss the variety of sounds the voice can produce by listening, labeling, and critiquing various exemplary sound ideals from diverse recordings.

McCoy also advocates developing listening skills in his book *Your Voice: An Inside View*; one of the few vocal pedagogy resources that not only includes but also begins with a section devoted to listening. In his first chapter he explores the importance of listening in developing an aural understanding and language of describing vocal sounds. McCoy utilizes much of the common terminology found throughout vocal studios and choral classrooms with descriptors such as dark, bright, and brassy which work well when first listening to examples. These can then be translated into components within the mechanism that are associated with the creation of those sounds.[14]

Utilizing exemplar vocal models can help students develop the listening skills promoted by McCoy and Jordan. These models can be from recordings, the teacher, or individual students. Exemplar recordings should be chosen carefully to be sure they are ideally the sounds you wish students to produce. However, poor model recordings can be utilized for an advanced exercise in diagnostic skills of vocal faults.

Being immersed in music that is representative of the vocalism and qualities they are to eventually explore can help students create those sounds more successfully. Using the McCoy

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[13] James Jordan, *Evoking sound: The Choral Conductor's Aural Tutor; Training the Ear to Diagnose Vocal Problems*, (Chicago: GIA Publications, 2006), 37-38.

[14] McCoy, *Your Voice: An Inside View*, 1-15.

model, students should first discuss and describe various sounds from the modeling choices. It can be helpful to create handouts that direct the students' listening and ask them to describe the sounds based on the *bel canto* tenets and components of the mechanism discussed in chapter two and three. These are some example questions:

1. Breath management and airflow: Is the sound aspirate or balanced? Is the sound pressed, constricted, or weak?
2. Onset: Does it sound like the attack of each note utilizes a glottal, aspirate, or balanced onset? Are the vocal folds closed prior to phonation? Are the vocal folds fully closed, partially closed, or not closed?
3. Resonance and space: Is the sound dark, bright, brassy/twangy, nasalized, tall, or wide? Is the larynx in high, middle, or low position?

A word of caution when describing sounds to students is to refrain from utilizing phrases that include too much imagery or metaphor. This includes descriptions of sound or comments such as "supported from the diaphragm," "placed in the mask," "imagine you are throwing your sound across the room," or "that is flat or sharp." These phrases can lead students to sing with undue tension and do not help students effectively adjust the element of their vocal technique that is causing the issue. Furthermore, not all students in the classroom experience sound, vowels, or imagery in the same way. The phrase "support from your diaphragm" holds little validity as singers cannot be in direct control of their diaphragm and it does not support sound. Utilizing the term "placement" in teaching pedagogy can cause students to literally place their sound in a specific area, causing tension and confusion. Miller asserts:

> Although most teachers are committed to one, or to some limited number of "places" to which a tone is to be directed and where sensations of resonance are to be felt, there are other teachers who use most or all of these expressions in an experimental way,

> depending on what they consider to be the need of the singer…there is always peril that the student may not experience the sensation that the teacher's terminology means to elicit. A wise route…would be to understand the acoustic principle of resonator coupling in singing, and to find some objective technical language to communicate this information.[15]

Thurman *et al.* agree and suggest that "[t]raditional vocal pedagogy (Western opera bias) encourages singer's to 'focus or place their tone' in the mask of the face…In inexperienced singers, a common response to this imagery is to raise the larynx and narrow the pharynx, thus robbing voices of appropriate fullness of voice quality and increasing laryngeal effort unnecessarily." [16] Using imagery such as "throw your sound," can cause students to force air against highly adducted vocal folds causing tension, a pressed sound, and collapse or constriction of the false vocal folds. In addition, phrases such as "you are flat" or "you are sharp" do not help students understand *how* to improve their intonation and negatively affect their psyche and self-confidence. Instead teachers should find the mechanistic reason for the intonation problems. Once students develop a simplistic mechanistic language in regards to breath, onset, and resonance they can begin exploring these characteristics in the creation of vocal qualities, alone and in groups. Throughout the listening exercises teachers should advocate that students describe sounds with terminology that is connected to the production of sound and elements discussed in this chapter.

Individual Instruction Within the Group Ensemble Setting

As students work through the exploratory exercises I recommend incorporating individual instruction, modeling, and feedback within the group ensemble setting. This rapport

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[15] Miller, *The Structure of Singing: System and Art in Vocal Technique*, 61.

[16] Thurman et al., "Singing Various Musical Genres with Stylistic Authenticity: Vocal Efficiency, Vocal Conditioning, and Voice Qualities," 521.

can be developed immediately and utilized within the aforementioned listening exercises and warm-up process. Incorporating individual instruction can provide models for other students, and allows individuals to get one-on-one attention within the rehearsal.

As described by NAfME, standard one dictates that students should not only be able to sing within a group setting, but showcase skill achievement at the individual level. Extensive research examining the relationship between group and individual assessment has suggested that student progress and achievement in a group setting is not indicative of individual achievement.[17] Additionally, teaching and assessment of musical elements in choral ensembles occurs predominantly at the group level as evidenced by the formal evaluation of ensembles at adjudications. However, music education research has compared the relationship between choral ensemble and individual performance achievement, and found no significant relationship between ensemble and individual sight-singing or expressivity achievement scores.[18] These

[17] For research examining individual versus group achievement, see Elizbaeth Gammie and Morag Matson, "Group Assessment at Final Degree Level: An Evaluation," *Accounting Education* 16, no. 2 (2007): 185-206; Jasper Knight, "Comparison of Student Perception and Performance in Individual and Group Assessments in Practical Classes," *Journal of Geography in Higher Education* 28, no. 1 (2004): 63-81; N. Plastow, G. Spiliotopoulou, and S. Priora, "Group Assessment at First Year and Final Degree Level: A Comparative Study," *Innovations in Education and Teaching International* 47, no. 4 (2010): 393-403; and Noreen M. Webb, "Collaborative Group versus Individual Assessment in Mathematics: Processes and Outcomes," *Educational Assessment* 1, no. 2 (1993): 131-152.

[18] For research examining ensemble and individual sight-singing or expressivity achievement scores see Paul Broomhead, "Individual Expressive Performance: Its Relationship to Ensemble Achievement, Technical Achievement, and Musical Background," *Journal of Research in Music Education* 49, no. 1 (2001): 71-84; and Michelle Henry and Steven M. Demorest, "Individual Sight-singing Achievement in Successful Choral Ensembles: A Preliminary Study," *Update: Applications of Research in Music Education* 13, no. 1 (1994): 4-8.

findings suggest the need for further research in individual achievement and the development of individual skills within the group setting.

One such possible research area is examining the effect of individual instruction in the group ensemble setting. Although not researched quantitatively, Richard Nace, choral workshop leader and conductor, developed a one-on-one rehearsal technique within the group setting that he found promotes the growth of both individual and group skills. This technique incorporates strategies of teaching through the individual that in turn promote ownership of the learning process. Nace prefaces that individual work should always be an invitation to students never a demand as it should be enjoyable and affirming. The following strategies were consolidated from outlines of his technique and provide a starting point for working with the individual in a group setting.

1. The first encounter should be short, enable trust, and disable fear.
2. Encourage individual participation throughout the rehearsal.
3. Develop common vocabulary for discussion of sounds and sensations.
4. Identify and affirm individual gifts and strengths.
    a. "I love that…"; "You are great at…"; "What's now possible?"
5. Ask questions, "What are you seeing?" and "What are you hearing?"
    a. Start simple with questions regarding posture, face, eyes, and breath.
6. Have individuals answer questions and comment on sounds heard.
7. Have individuals model easy concepts first: Posture, face, and breath.
8. Have individuals provide a vocal model for concepts.
    a. Watch and listen for the successful model.

b. Affirm each individual model with something they are doing well and transition to working with that individual on the concept you are working on in the group setting. Always end with a positive strength of that individual.[19]

Developing individual skills within a group ensemble setting can be challenging when only working with and providing feedback to the entire ensemble. Implementing these strategies can provide teachers with a means to assess the students on an individual and consistent basis. It can also help students learn from one another, gain self-confidence, grow individually, and receive individual feedback. When using any of the exercises listed in this chapter, the teacher should take time to develop their skills in teaching through the individual.

Exploring Breath Management and its Connection to Sound

One of the most integral aspects to achieving healthy singing in all styles is proper breath management. When first exploring breath management it is important to learn breath's connection to phonation, which can be achieved through utilizing the concept of *appoggio*. Although connected to the *bel canto* tradition, *appoggio*, can also be helpful within CCM.

EVTS™ and Estill's research have been criticized for the lack of focus on the breath mechanism, but there are clear concepts of breath understanding associated with her description of anchoring, as seen in figure 1. Estill teaches the concept of anchoring utilizing an expansion of the back and rib cage through the external intercostal muscles, which correlates to the concept of *appoggio*. "The muscle activity we cultivate in torso anchoring…tends to spread the rib cage and lift the sternum slightly…This muscle activity appears to stabilize the spine and rib cage…The

[19] Richard Nace, email message to Author, *Outline A and B: Teaching the choir through individuals within the choir*, August 4, 2013.

experience is of breath being supported."[20] Furthermore, in regards to the breath mechanism her research, discussed in chapter three, examines the variations in subglottic pressure, airflow, and adduction of the vocal folds within each vocal quality. However, she does not discuss the process of breath management in detail. I have found it important for amateur singers to understand the concepts of inhalation and exhalation, associated with *appoggio*, in order to work with all vocal qualities healthfully. Gillyanne Kayes, trained in EVTS™, with colleague Jeremy Fisher developed a system entitled *Vocal Process* that involves understanding the process of breath management. Kayes is also a proponent of kinesthetic association and utilizes a self-monitoring "hands-on" approach to learning vocal technique. Her approach allows students to feel various parts of the mechanism as they explore.[21]

Prior to exploring breath, students should have listened to the differences between aspirate quality and its opposite, a highly adducted and constricted speech quality.

1. Have students alone or in groups speak the phrase, "Happy birthday to you!" in both aspirate quality and non-aspirate speech quality.
2. Have students change the rate of airflow to understand the range of sounds that can be produced from a fully aspirate quality to non-aspirate speech quality.

Once students are successful at listening and producing these qualities in their speaking voice they can explore the components of *appoggio* and breath management associated with singing. While working with breath it is important to teach alignment concurrently. Have students become aware of their alignment and stance, knees should be unlocked, rib cage elevated with lower back not protruding forward, and spine elongated through the atlanto-occipital joint. The

[20] Estill, *Estill Voice Training Level One: Figures for Voice Control*, 111.

[21] Kayes, *Singing and the Actor*, 17.

chin should be level and not elevated or lowered. Students should notice a stretched sensation from the sternum and spine outward and upward rather than lifting the chest up and forward. Explore the following inhalations with your students:

1. What type of breath would you take if you were hyperventilating and out of breath? This helps students feel clavicular breathing.
2. What type of breath would you take if you were going to blow out 20 candles on a birthday cake? This helps students feel a low breath.
3. What type of breath would you take if you were going to hold your breath to rid your hiccups? This helps students feel the suspension of breath.
4. What type of breath would you take if you were panting like a small dog or a very large dog? This helps students feel the connection to anchoring and movement of abdominal muscles associated with breathing while feeling spatial variations in the larynx and pharynx.
5. What type of breath would you need to take if you were going to expand an inner tube wrapped around your lower ribs? This helps students feel the expansion of the entire rib cage.

When learning inhalation for singing students should first be aware of the "silent breath" representative of an open rather than closed glottis during inhalation. Richard Miller states, "Silent inspiration is the hallmark of *appoggio*. Noise…results from the resistance of the throat to inspired air."[22] The silent inhalation also benefits CVT and helps students maintain a healthy vocal production for all qualities discussed throughout this document.

Learning the "silent breath" technique requires an exploration of constriction and

[22] Miller, *The Structure of Singing: System and Art in Vocal Technique*, 29.

retraction associated with the true vocal folds and the false vocal folds, the area directly above the vocal folds. Kayes and Fisher, as part of *The Vocal Process*, developed a DVD entitled *Constriction and Release: The Techniques*. Within this DVD Kayes explores techniques and exercises for feeling the variations of constriction and retraction of the false folds. The following strategies were taken directly from this DVD, which were inspired by Estill's research. The exercises should be performed while students feel the middle and upper areas of the larynx around the thyroid cartilage with their fingers.

1. Have students first explore the feeling of retraction by creating an inner smile, towards the back of the mouth, while thinking of something that is funny.
    a. Allow this to change into something that is very funny with a sense of inner laughter, maintaining an inner and outer smile.
    b. Allow this to change into a slight giggle, or chuckle, feeling as if it is coming from the area you are feeling on the larynx.
    c. Now keep the sensation but laugh silently, making it as funny as they can.
    d. Finally, try to do this exercise while keeping a calm relaxed face with lots of laughter inside, still silently.
    e. Have students discuss what they felt occurring in their larynx.
2. Have students exhale with a noisy sigh or whisper and inhale with a noisy whisper to identify the feeling of constriction. Students can change the amount of noise in the whisper to hear variations.
    a. Now have students exhale and inhale noiselessly with the idea of the silent laugh.

b. Have students can completely cover their ears with their hands to hear the differences occurring inside.
c. Have students switch between noisy and noiseless, or constricted to retracted.
d. Again have students describe what they felt. The sensations should be one of widening during the silent laugh and some may feel a little lowering of the larynx.[23]

3. To feel closure of the vocal folds first have students prepare to sneeze or cough and feel the vocal folds fully closed. Even partially closed vocal folds can result in a noisy inhalation.
4. Now have students try to pant noiselessly as an advanced exercise, making sure they do not hear any constriction.

As discussed in chapter two vocal pedagogues Vennard, Miller, Alderson, and Doscher believe that inhalation for singing should utilize a combination of costal/intercostal breathing and diaphragmatic breathing. The aim is to achieve an elevated sternum, expanded rib cage, and outward movement of the lower thorax and epigastric region. Stark suggests this is the balance between inspiratory and expiratory muscles.[24] Although combining these two breathing techniques is essential to all vocal qualities, especially *bel canto* quality, not all students will feel the same amount of movement in these areas due to varying body types and development. In addition, when learning *appoggio* it is important to not have one area overpower the other. For example, only focusing on the epigastric area can sometimes cause inexperienced singers to

[23] Exercises 1 & 2 were transcribed and adapted from Gillyanne Kayes' exercises on her DVD. Gillyanne Kayes, and Jeremy Fisher, *Constriction and Release: the Techniques*, DVD (Presteigne: Vocal Process Multimedia Vocal Resources, 2009).

[24] Miller, *The Structure of Singing: System and Art in Vocal Technique*, 23.

collapse the rib cage and a pressed sound, not associated with the *bel canto* tradition, is produced. An understanding of combining the sensations of both rib and epigastric expansion will allow students to anchor their breath dependent on the vocal demands of the music. To begin exploring these breathing techniques have students first find the proper alignment and then explore the following strategies.

1. Have students raise their hands to the side of their body, parallel to the floor, with palms facing the ceiling. Students should notice the expansion of their rib cage. Have student maintain this feeling while lowering their arms to the starting position.
2. Have students lean their back and head against a wall to feel the elongation of their spine.
3. Have students stretch from the centerline of their body: sternum and spine outward through their shoulders. This helps students with rib expansion rather than rib elevation.
4. Have students feel this expansion by pressing the hands together in front of the face with elbows stretched outward and parallel to the floor.

The expansion of the ribcage should be maintained throughout the exhalation. Figure 4 helps provide a visual representation of the breath mechanism in what I call the "inverted pyramid expansion". In this model students can focus on expanding all four points at the base of the inverted pyramid throughout singing. For a varied approach students can also expand the sides of the pyramid.

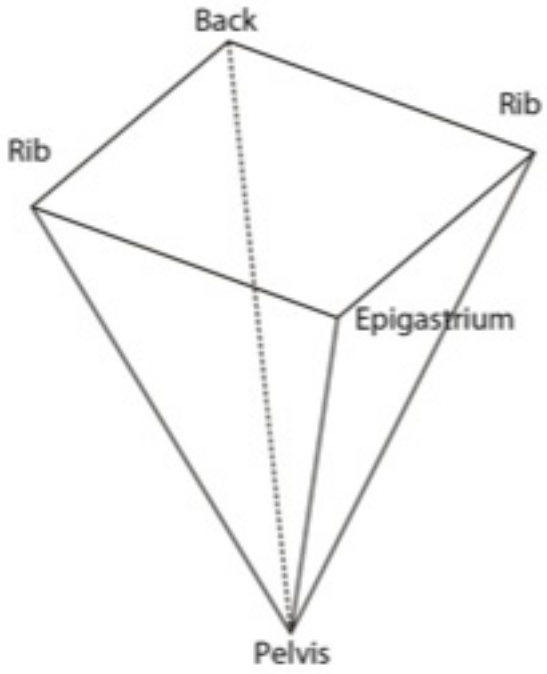

Figure 4. Diagram of inverted pyramid for breath expansion.

It can be helpful to experience movement during inhalation in the upper abdomen, costal/intercostal muscles, and back through a hands-on approach. To feel the back expansion have students place their hands on the lower back ribs while leaning forward from the waist. Students can then inhale over four counts and exhale over four counts to feel the movement. To feel the epigastric and rib expansion students can place one hand on their epigastric area and one hand on their rib cage.[25] Students can then inhale again over four counts and exhale over four counts to begin to feel the movement in these areas. Have students maintain their hand positions while exploring the following strategies for connecting these sensations with sound.

1. Have students giggle and laugh in various vowels colors of bright and dark qualities.
2. Have students speak voiced consonants “v” and “z” to feel expansion in the epigastric area.

[25] If students find it difficult to feel the rib expansion have them move their hand higher on the rib cage rather than on their lowest floating rib.

3. Have students speak "mmm" with no internal resonant space, teeth close together, and again with the pharyngeal space of [o] behind closed lips without teeth touching.
4. Ask students what they felt during each of these exercises and compare their answers in groups.

When connecting these sensations to singing it is important to maintain the expanded posture and continue to feel that these areas are being engaged and connected until this becomes habit. However, singers should be careful that the expanded posture does not become too rigid or forced into position.

> No initial sensation of grabbing or holding the breath should be associated with singing. When a singer feels extreme muscle resistance to inhalation in either the pectoral or abdominal regions, a 'full' or 'deep' breath is not the cause; unnecessary muscle antagonism is taking place…In inspiration for singing, the lungs should never feel crowded – only satisfied.[26]

The following exercises, shown in figures 5 and 6, can be used to connect these sensations to sound and suspension of the ribcage on each eighth rest. Have students place one hand on either the ribs or epigastrium, and one hand on the lower abdomen or pelvic area during these exercises. Students should focus on expansion of the rib cage and upper abdominal areas and subtle natural movement inward and slightly upward in the lower abdominal area. The teacher should focus on connecting sensations of suspension and expansion into their conducting gesture.

[26] Miller, *The Structure of Singing: System and Art in Vocal Technique*, 25-26.

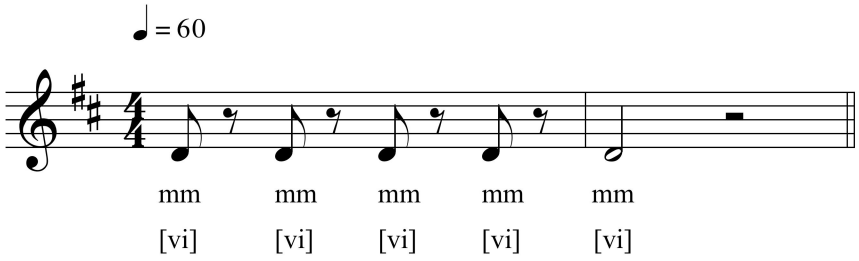

Figure 5. Breath management exercise 1: Exploring rib expansion.

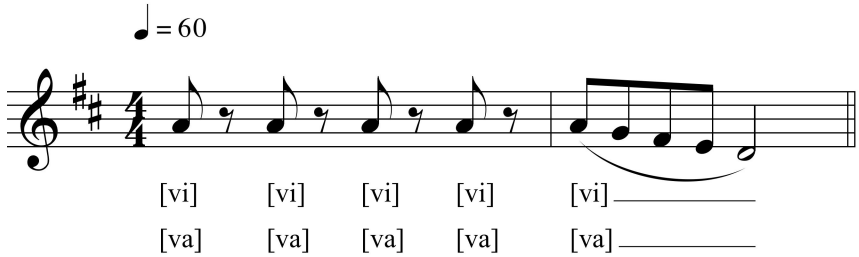

Figure 6. Breath management exercise 2: Exploring rib expansion.

As with all exercises in this chapter, teachers should begin in the key presented, after which exercises can be explored up and down by half or whole step with different vowels throughout the range. It is also the hope that from these exploratory exercises teachers can create new exercises while maintaining the integrity of the concept being explored.

Exploring Speech Sounds and Speech Quality When Singing

After working with breath management students should begin developing their speech awareness, and their speech habits. The human voice is capable of a creating a vast number of non-linguistic and traditional speech sounds. When discussing speech sounds it is important to remember the variation among regional accents and dialects associated with specific languages and countries. In regards to the mechanism, a student's natural attractor state might include vocal fry, aspiration, a low tongue position, or a low larynx. It is for this reason that speech sounds are not universal between or within countries. In the choral setting the presence of varied dialects

and regional accents is magnified due to the quantity and diversity of singers involved. Furthermore, depending on vocal development, societal or peer influence, and cultural background students will speak with a variety of timbres and pitch levels. Alan Gumm, Professor of Music Education at Central Michigan University, suggests that vocal tone can reflect students' self-image, family characteristics, and personality.

> A shy gentle person may place an unresonant, gentle, whispery quality into the voice. An extrovert may put a boisterous, all-around-resonant quality into the voice. A perfectionist may tensely control tone with a tight-jawed and tense-tongued vocal quality. A sarcastic person may use a harsh abrasive quality that comes directly from the hard palate. A humble, folksy person may put an unrefined coarseness into the voice.[27]

Estill's speech quality is associated with a very specific recipe with the body in a relaxed state, shown in figure 3. In this section we will be utilizing this ideal for speech quality, which might not coincide to the speech quality attractor states outside of the United States. Exploring the variety of speech sounds and vowel ideals with students can help students successfully sing in a speech quality, which is utilized in a variety of CCM. This begins with an understanding of the components of the vocal mechanism that influence vowel production and timbre including, but not limited to, laryngeal positioning, pharyngeal space, AES width, and movement of the jaw, tongue, and lips. One vowel can have countless variations and timbres depending upon the tongue movement (arching or lowering), placement of the tongue (high, middle, low, forward or back), pharyngeal space (expanded or constricted, vertical or horizontal), laryngeal position (high, middle, or low), thyroid cartilage (vertical or tilted), AES (narrow or wide) and the velopharyngeal port (velum position raised, middle, or lowered). With the advent of the International Phonetic Alphabet (IPA) in 1886, scientists created specific sounds associated with

[27] Alan Gumm, *Making More Sense of How to Sing: Multisensory Techniques for Voice Lessons and Choir Rehearsals* (Galesville, MD: Meredith Music Publications. 2009), 91-92.

symbols, regardless of country. These are utilized throughout this chapter and can help in the teaching and production of vowel ideals, see Appendix A.

When first exploring speech quality students should understand that the tip of the tongue's resting place should be at the bottom teeth, and the tongue should return to this position after singing a consonant. Vennard concurs, but warns against the tip of the tongue being pressed against the teeth, resting on the lower gum line, or raised as these can produce tensions and affect the sound quality.[28] These differences can be felt by manipulating the tongue placement and height while speaking an elongated vowel.

Next students should become aware of their habitual speech level and find their optimal pitch level for speaking. Maintaining a less than optimal pitch level can cause vocal fatigue over time. The following strategies can help students learn their optimal pitch level and explore timbral changes at that level.

1. Have students answer simple questions such as, "Is your name X?" "Do you like X?" with "uh-huh" or "mmm-hmm".
    a. The ending pitch of their answer on "huh" or "hmm" is commonly their most optimal pitch level.
    b. Have students answer a question again and concentrate on that pitch of the voice. Have them then immediately speak a sentence at that level.
    c. Students can begin to notice this is the most resonant pitch level, and may begin sensing the vibratory feedback or buzzy quality associated with that level.
2. Have students sing a descending scale until reaching the lowest comfortable note.

[28] Vennard, *Singing: The Mechanism and the Technic*, 112-113.

a. Start on that note, counting it as one, and sing back up the scale approximately four notes higher.[29]

3. Have students speak the individual vowels [i], [e], [a], [o], [u] from a bright nasal placement to a darker throaty color over 4 counts. Be sure to remind students to work at their optimal pitch level. Have students once again feel the laryngeal movement associated with the changes in sound from bright (high larynx) to dark (low larynx).
    a. Students can begin to notice the variation of timbre on each vowel. They may even begin to notice a change in the vowel they hear as they move to a darker resonance quality of that vowel.
    b. Ask them, "When does the vowel resonance feel the most comfortable?" and have them stop at that point. Then see if the students can start at that specific pitch or find it quickly.
    c. Have them do the same exercise but moving slower over 8 and 12 counts to notice more subtlety.
4. Have the choir work alone or in groups with this strategy, and take the time to work and assess with individuals within the group ensemble.
    a. This can help students develop their listening skills while hearing the changes their classmates are producing.
    b. Have the students in groups who are not singing, listen for when they think the sound is evenly balanced between bright and dark or at the optimal resonance for each vowel.

[29] Virgil Anderson, *Training the Speaking Voice*, 3rd ed. (NY: Oxford University Press, 1977) 106.

5. After these explorations, have the choir try this by gender, sections, and as a whole. Stop them with a hand cue at any given moment and ask them to match resonance or quality with those around them.
    a. This helps students begin to develop their skills at matching resonant qualities with those in their sections and across the choir.
6. Finally have the students explore speech quality with both thick and thin folds.[30] Students can find the difference between thick and thin folds by saying, "I'm sorry" in a sincere, low effort way for thin folds, and again in an agitated manner for thick folds.
    a. Speech quality will diminish in intensity as the range increases. If increased intensity is desired students can add AES narrowing or utilize belt quality.
    b. Have students monitor their larynx and be sure the thyroid cartilage maintains a mid-position without the thyroid tilting.

When exploring speech quality a bright-nasalized sound can be associated with the lowering of the velum. A darker quality is associated with a lower positioned larynx and lowered or depressed tongue. Over the course of the previous exercises students will be able to find singing positions between these two extremes with a mid-larynx and a raised velum. Students may find it difficult to feel equalized resonance with subtle movement of the tongue within given vowels. Moreover, students may not hear vowels in the same way, and dependent upon the speech pattern of each student, may find it difficult to sing unified vowels with others. When asked to sing [e] some students will naturally be singing a sound closer to [ɛ] or even [i], but they

[30] Both thick and thin folds can be utilized in speech quality, although Estill's recipe calls for thick folds shown in figure 3. The usage of thin folds in this quality is a permutation of that recipe.

will think they are singing [e]. This can be due to various tongue positions from low, mid, to high. Choral teachers may find it easier to work on matching resonance through tongue awareness rather than referring to vowel matching. The following strategies can help students feel the subtle tongue movement between vowels while focusing on consistency of resonance and a higher tongue placement. Remind students that the tip of the tongue should rest on the lower front teeth and the tongue should maintain a comfortably high position as in [i] or [ae] without being pressed or forced. If the tongue is pressed or forced into an extreme high or low position tongue tension can develop.

1. Using figure 7, have students speak the starting vowel and elongate the sound. Then students should slowly slide from that starting vowel through the mid-vowel and finally to the final vowel.
    a. When exploring figure 7, focus students' attention on the subtle tongue movement between these vowels. They will begin to notice that these vowels are close together and the tongue does not need to move very far dependent on the desired sound.
2. Have students also start on the final vowel, slowly slide through the mid-vowel, and finally to the starting vowel. These do not constitute all possible vowel exercises.

Starting Vowel	Mid-Vowel	Final Vowel
[i]	← → [I] ← →	[e]
[u]	← → [ʊ] ← →	[o]
[e]	← → [ɛ] ← →	[æ]
[o]	← → [ɔ] ← →	[a]
[ɛ]	← → [æ] ← →	[a]

Figure 7. Speech exploration exercise 1.

3. Have students now perform this exercise on a single pitch in a comfortable range for each voice part, over eight counts as shown in figure 8.
    a. Keep students attention on the vowel shadings between each vowel change as they slide from start to mid to final. The vowel shadings will most likely still sound like a version of the starting vowel if the tongue position is maintained.

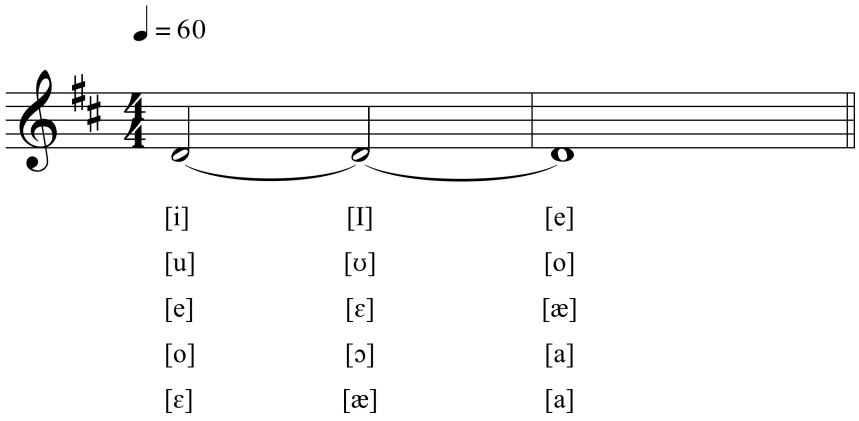

Figure 8. Speech exploration exercise 2.

Dependent upon students' speech patterns, the pronunciation of diphthongs, or lack thereof, may also vary within the choral classroom. In producing the *bel canto* quality with English text, students should be aware of maintaining the position of the first vowel in a diphthong.

> If a diphthong is assigned to a held note, the singer must provide a beautiful tone for the indicated number of counts, and he should not change the vowel. Therefore he will sing the 'long' vowel for almost the whole time, and go into the 'vanishing' vowel or semi-vowel only at the last moment.[31]

[31] Vennard, *Singing: The Mechanism and the Technic*, 178.

However, in speech quality, aside from some regional and dialect differences, diphthongs can be given somewhat equal duration over sustained notes. This is important when noting the differences between *bel canto* and CCM. In CVT, singing should be authentic to the vernacular speech of the specific character, region, or culture. In doing so, the performer can remain intelligible and believable to the audience. Additionally, teachers should keep in mind that for some regional accents authentic pronunciation requires the elimination of the final vowel in the diphthong as can be heard in country music. In the choral setting decisions regarding the treatment of diphthongs can be made through further research collaboratively with the students or at the discretion of the teacher. For example, music that requires singers to sing a diphthong over a half or whole note will require rhythmic choices that help maintain intelligibility over the sustained note values in accordance to the text.

When performing diphthongs in CCM students should be made aware of the jaw movement associated with a diphthong that moves from an open to closed vowel, as in the word "bay". In both *bel canto* and CCM styles the jaw can either close over the second part of the diphthong as in natural speech or the jaw can stay relatively open with the tongue changing the vowels. Students should practice performing diphthongs in both ways. Performing the diphthong with the jaw remaining open allows the resonance to remain consistent throughout the pronunciation of the diphthong. I have found this to be especially beneficial for maintaining consistency in resonance associated with *bel canto* and belt qualities.

Speech Prosody

As students become more comfortable working with a variety of speech sounds they can also begin exploring the natural prosody of speech. This is important for singing authentically in the vernacular styles associated with CCM. Merriam-Webster dictionary defines speech prosody

as the rhythm and pattern of sounds of poetry and language. At the smallest layer, regardless of genre, the shift of weight and syllabic stress of words should be employed naturally. Amateur and beginning singers might have a tendency to sing all syllables with the same stress. Speech prosody exercises can be helpful in having students understand the difference between stressed and unstressed in all styles.

1. Have students work in groups speaking words that are multi-syllabic both naturally and with elongated syllables.
2. Have the students switch the natural stress of the words to the opposite incorrect stress.
    a. e.g., switch the stressed syllable of the word “SYL-la-ble” to “syl-LA-ble”.
3. Have students stress each syllable equally as in “SYL-LA-BLE”
    a. Students will begin to understand the importance of syllabic stress in intelligibility of language.
4. Have students apply these ideas utilizing speech quality to the familiar text of the song, “Happy Birthday” on a single pitch as shown in figure 9.[32]
    a. Have students focus on the unstressed syllables more than the stressed syllables. This will help avoid pressing the tone to when speaking the stressed syllables.
    b. Work with the breath management strategies from earlier. These exercises should be connected to the breath.

[32] The text from the familiar “Happy birthday” song is utilized due to its simplicity. Any phrase can be utilized in its place that maintains the integrity of the exercises.

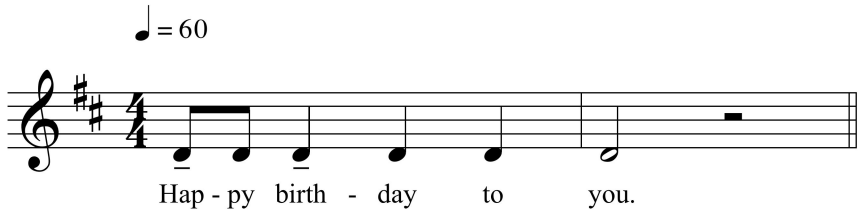

Figure 9. Speech exploration exercise 3: Syllabic stress.

5. Have students sing the same text, but with an ascending melody as shown in figure 10. This will help students work with syllabic stress issues on ascending motives.

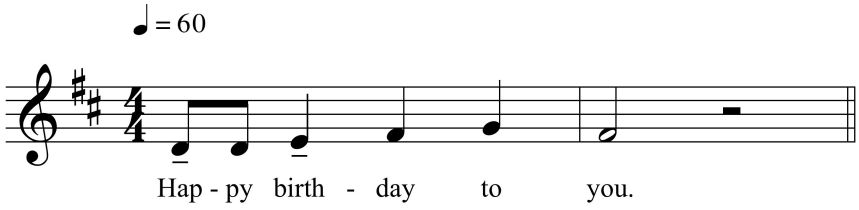

Figure 10. Speech exploration exercise 4: Syllabic stress.

During the previous exercises it is important to listen for students becoming disconnected, or unhooked, from the breath when singing an unstressed syllable. In both *bel canto* and CVT the singers should remain connected to the idea of breath anchoring and *appoggio*. However, in CVT the stressed to unstressed syllable can sometimes switch between qualities that use thick vocal folds, such as speech quality, to thin folds or a raised vocal fold plane, such as cry or aspirate qualities. This depends on the teacher's or singer's choice and emotional connection to the text.

Once students have explored the speaking voice, variations in vowel colors, diphthongs, and speech prosody they can begin working on producing speech quality with a mid-larynx position. A key to speech quality is maintaining the prosody integrity of both rhythm and articulation.

1. Using their optimal speech level, have students speak the sentence, “I’m so happy because the sun is shining today!” Have them try it with both thick and thin folds.
    a. To explore thin folds have students sigh lightly with no aspiration in the sound. Students can feel the larynx to make to sure there is no thyroid tilt occurring as they perform this task.
    b. To feel thick fold have students begin with a slight glottal onset and a louder sound.
2. Have students sing on a single pitch, and then a melody as shown in figures 11 and 12, with thick and thin folds.
    a. Have them work in groups to help each other notice whether they are singing in the same quality they were speaking. This can be a very challenging task for students because once they begin singing they change to their habitual “singing voice attractor state” rather than maintaining speech quality.

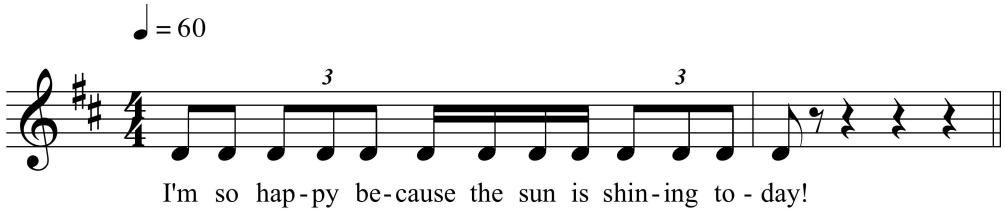

Figure 11. Speech exploration exercise 5: Speech prosody.

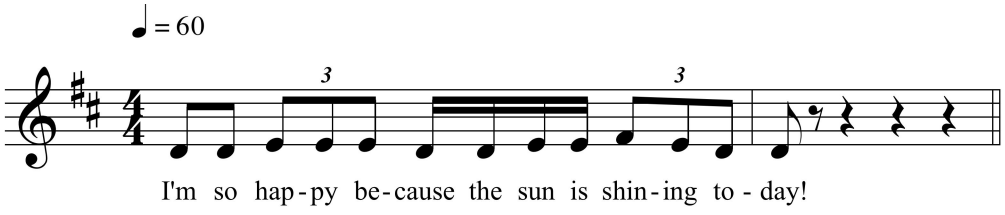

Figure 12. Speech exploration exercise 6: Speech prosody.

Exploring Vocal Qualities Through Variations in Onset and Resonance

Finding ideal breath management and speech awareness, prior to exploring other vocal qualities, can help students relieve natural tensions and build a healthy foundation before manipulating other components of the mechanism. This followed by an understanding of supraglottic changes within the larynx, pharynx, velum, jaw, tongue, and lips, allow students to enhance their awareness of components that affect variations in onset and resonance. Vennard suggests:

> Most singers have improved their voices by learning what to do with the pharynx, the mouth, the tongue, the jaw, etc…But I want to guard against thinking that resonance tells the whole story. There is good evidence that when we are learning the shaping of cavities above the larynx, we are training the vocal cords unconsciously at the same time.[33]

Vocal qualities associated with EVTS™ can also help singers explore onset and resonance in regards to changes within the vocal mechanism. Although thorough training in Estill's Compulsory Figures, associated with the first course in EVTS™, is beneficial, teachers can explore these qualities from the definitions presented in chapter three. This section will discuss the main mechanistic changes and provide exploratory exercises for each quality. Furthermore, this section will continue to provide a pathway to CVT from the main tenets of onset and resonance associated with *bel canto* tradition. For example, when correlating laryngeal movement to the *bel canto* principle of *chiaroscuro* one cannot have an understanding of a balanced sound without first hearing, analyzing, and producing sounds on both spectrums of bright and dark. We can then utilize Estill's research to determine which vocal qualities are associated with *chiaro*, higher laryngeal position, and with *scuro*, lower laryngeal position. With

[33] Vennard, *Singing: The Mechanism and the Technic*, 80.

the combination of both *bel canto* objectives and Estill's research, teachers can help singers produce a variety of vocal qualities from the basic tenets found within each style.

Regardless of the vocal quality utilized in any music, the mechanistic setup should occur prior to inhalation. This can be thought of as creating the space and preparing the instrument for the desired sound production and resonance. Preparing for singing in this manner prior to inhalation can also help singers achieve a 'noiseless" inhalation. The following diagram, figure 13, is a representation of this model created by Dr. Geoffrey Boers.[34]

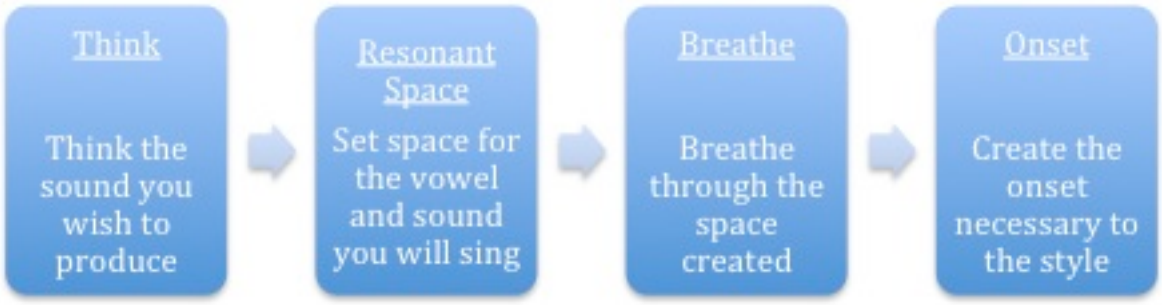

Figure 13. Model for preparing the vocal mechanism prior to inhalation.

Onset

The *coup de glotte*, or stroke of the glottis, relates to the *bel canto* principle of a balanced onset, however CVT can utilize varied onsets: aspirate, glottal, and balanced. The aspirate onset, associated with aspirate quality, is caused by an imbalance of airflow and an unclosed or partially closed glottis. A wide variation from a whisper to a phonation accompanied with

[34] Complied from Advanced Choral Techniques class notes from the University of Washington with instructor Geoffrey Boers.

audible airflow can all be produced within aspirate quality. Students can explore aspirate quality by first understanding the aspirate onset.

1. Have students feel maximum airflow by speaking the consonant “h” as if they were trying to fog up a window, with slight constriction and then again with retraction.
2. Have students add pitch to this sensation with the following exercise, as shown in figure 14, on the word “Hi”. They will notice a large amount of air escaping and the need for a new breath rather quickly.

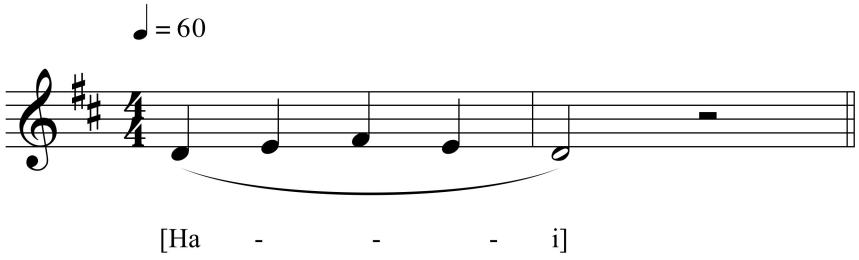

Figure 14. Onset exercise 1: Aspirate onset.

3. Have students repeat the exercise with “silent laugh” retraction and moderate airflow through a partially closed glottis. In aspirate quality students should be able to hear breathiness in their sound.

Aspirate quality is predominantly utilized in conjunction with microphone singing, but I have found it useful for teaching large choirs the difference between onsets. I have also found it helpful when singing CCM repertoire that requires a more intimate quality reflecting vulnerability with breathiness of tone. However, a large amount of expelled airflow and too large of a glottal opening can cause the sound to be inaudible to the audience without a microphone. Remind students that in aspirate quality a little audible airflow is usually all that is needed. Like many qualities, aspirate quality would not be used for an entire song, but rather a moment in

relation to the text. A glottal onset is produced by an imbalance of airflow and a tightly closed glottis. Students can explore the glottal onset with the following exercises:

1. Have students speak “uh-oh” as if they made a mistake or broke an expensive item.
    a. Notice the vocal folds are closed prior to phonation.
    b. Students can also feel this closure of the vocal folds by producing a “silent” coughing or the holding the moment of a cough prior to making sound. They can also feel the glottal closure by pretending they are lifting a heavy object.
    c. The glottal onset is only used sparingly in certain genres as it can cause damage if used at extremes in effort or dynamic. A variation of a glottal onset is a creak onset or fry used in some genres of CCM.
2. Have students sing the following exercise, as shown in figure 15, with a glottal onset on the first word “I”. Have them also try it with an aspirate onset. As with aspirate quality variations of effort can help students feel the difference between very effortful glottal onsets versus lower effortful level onsets. A high effort level glottal onset is rarely needed.

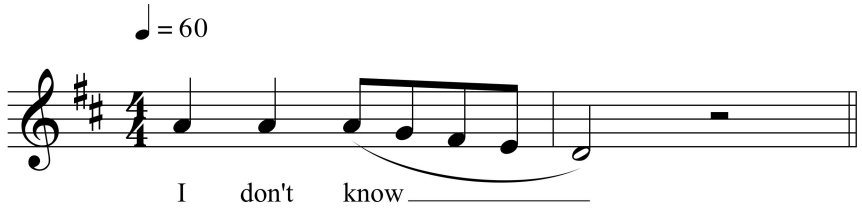

Figure 15. Onset exercise 2: Glottal onset.

A balanced onset, associated with *bel canto* quality, begins with the noiseless inhalation described earlier, with airflow and vocal fold adduction occurring simultaneously. When producing the balanced onset students might notice the sensation of subglottic pressure below the

vocal folds but should be careful not to press the vocal folds together too tightly or push the flow of air forcibly passed the vocal folds. This can cause an imbalance in the sensation of *appoggio*. When working with the balanced onset remind the students of the inspiratory muscles discussed earlier and proper breath management. The exhalation of breath should be connected to the sensation of inhalation. Try the following exercises for work with the coordination of a balanced onset.

1. First have students sing the exercise, as shown in figure 16, on [vi] to feel a connection to breath energy and a non-glottal onset. Again remind students of the "silent laugh" or silent inhalation associated with retraction.

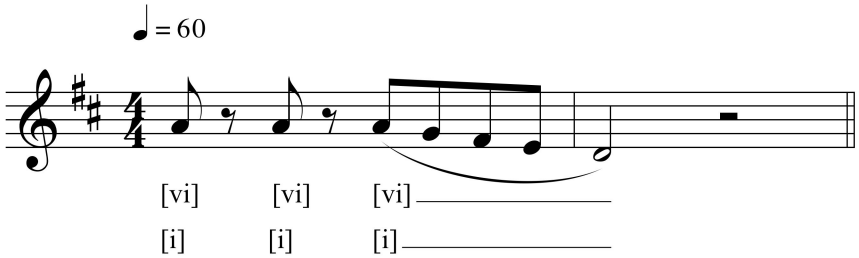

Figure 16. Onset exercise 3: Balanced onset.

2. Then have students perform the exercise on the sound [i] focusing on a balanced onset while maintaining an expanded rib cage.
    a. Have students work in groups to check if they are producing a balanced or glottal onset.
3. Have students feel their vocal folds reopening and a small inhalation on each eighth rest, while still maintaining an expanded posture.

Resonant Changes Associated with Vocal Qualities

The previous work with speech awareness and formation of vowels showed the changes in resonance associated with subtle tongue movement. "Accurate vowel production depends on

proper degree of tongue elevation, point of tongue elevation, amount of jaw opening, and lip shape."[35] As with the speech and vowel exercises discussed earlier in this chapter, students can explore other mechanistic changes in the same way. Such changes in resonance are produced by the laryngeal position (high vs. low), the width of pharyngeal space (narrow vs. wide), and the velum position (raised vs. lowered). The following qualities can be incorporated into many different genres and should be explored throughout the choral rehearsal. Working from these qualities and their components can be especially helpful in "re-ups" or "interrupts" when the sound desired is either not occurring, or there is tension present. By exploring various components of the mechanism or reminding students what components are involved in the specific recipes for qualities listed in figure 3, tensions can be avoided.[36]

Laryngeal movement varies dependent upon the vocal quality desired for specific repertoire. As Estill has proven, it can be healthy to sing with a raised larynx and some repertoire requires that position. As stated in chapter three, various qualities are associated with low, middle, or high laryngeal positions although the extremes of any position should be avoided. Laryngeal level can also be adjusted within qualities to slightly alter the desired sound. Students can explore the movement of the larynx and become familiar kinesthetically with the varied sounds associated with such movement.

1. Have students place their fingers on either side of the larynx, making sure they touching the larynx and not just the muscles on either side of the larynx.

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[35] Julia Davids and Stephen A. LaTour, *Vocal Technique: A Guide for Conductors, Teachers, and Singers*, 88.

[36] The following strategies are provided as adaptations from my work with EVTS™, unless otherwise noted; full credit is given to the source material for connections of sound and sensation. For further instruction on these specific qualities and their components seek out an EVTS™ course workshop.

2. Have sounds somberly speak “Oh, no!” or “Why did this happen?” with the emotional connection of a deep sob.
    a. This will allow students to feel a lowered larynx.
    b. Be sure students are not using aspirate onsets or AES narrowing when producing the sob sound. If students have trouble with this have them try it at a softer dynamic level.
3. Have students shout “Eek!” or giggle in a high range “hee-hee!” with the “silent laugh position”.
    a. This will allow students to feel an elevated larynx.
4. Have students transition between these sensations to a full sentence keeping the sensations first of the sob quality and the then the fearful “eek” or giggle.
    a. Have students speak, “Happy birthday to you!” keeping the laryngeal position constant in both high and low positions prospectively.
5. Continue working with individuals to help the choir hear various changes and also to provide feedback and assessment to individuals throughout this process.
6. Have students sing the exercise, as shown in figure 17, while maintaining laryngeal positions, first low larynx and then high larynx. Be sure to remind students that the retraction of the false vocal folds is paramount in all qualities to avoid unnecessary tension.

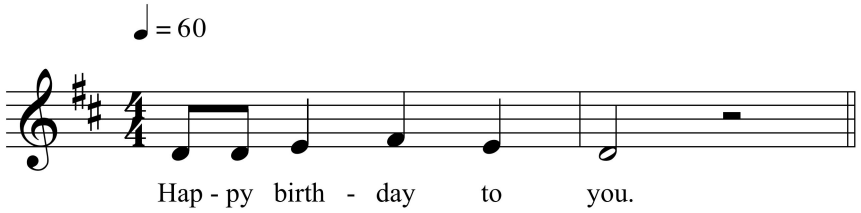

Figure 17. Resonance exercise 1: Laryngeal movement.

Cry/Sob Quality

The cry quality recipe components slightly raised larynx, high velum, tilted thyroid cartilage, and thin vocal folds.[37] I have found this quality is helpful for getting students to feel a different laryngeal position especially for those whose attractor state incorporates a low larynx. Therefore while students explore the cry quality they should continue to feel the laryngeal area with their hands to be sure it is not lowering. Cry quality is a great alternative to speech quality as it incorporates width and richness in the sound without being overtly dark. Sob quality is like cry quality except it utilizes a lowered laryngeal position, which is beneficial for emphasizing darkness and sorrowful emotion. Have students first explore figures 18 and 19 with cry quality and then again with sob quality. Remind students that it is important to maintain the emphatic emotion attached to "crying" or "sobbing" within each quality respectively. In addition remind students to feel the laryngeal position with their hands, and maintain vocal folds adduction to avoid aspirate quality with a wide AES.

1. Have students whimper in their mid to high range, maintaining the silent laugh position.
2. Siren on an "-ng" in the mid-range and gently downward with the feeling of a sigh. The "-ng" should include a tongue position that touches, not presses, the velum not

[37] Estill, *Estill Voice Training Level Two: Figure Combinations for Six Voice Qualities*, 37.

the hard palate. Be sure to have students maintain a connection to the breath mechanism.[38]

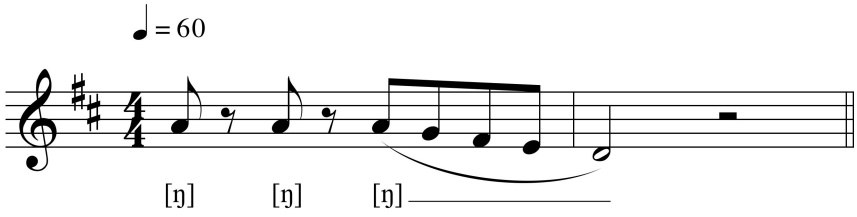

Figure 18. Resonance exercise 2: Exploring cry/sob quality.

3. Have students speak "Why," or "I'm sorry." Be sure to maintain a cry face as well.
    a. Check to be sure students are singing with the same dynamic and quality in which they spoke these phrases.
    b. Have students feel the larynx to ensure the thyroid cartilage is tilted throughout these exercises.
4. Utilizing a small whimper sound, have students perform the following exercise first both cry and sob qualities. Remind students of the laryngeal position for each quality.

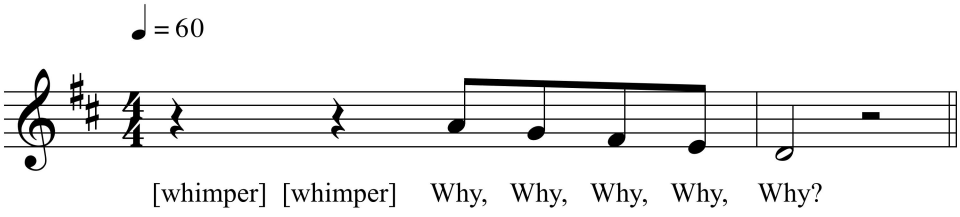

Figure 19. Resonance exercise 3: Exploring cry/sob quality.

Students might notice these qualities can be nasalized if they have not yet understood how to maneuver the velum. The velum plays an integral role in the changes within vocal

[38] Ibid., 35.

qualities. The position of the velum should be raised in all qualities unless the singer is producing a character voice utilizing nasality, speaking nasalized consonants as in the French language, or producing a nasal twang quality. The following strategies can be helpful in feeling and maintaining a raised velum.

1. Have students speak the word “kind”. Point their attention to their tongue position is when producing the consonant “k”.
    a. Have students hold the consonant “k”, without producing sound, and then inhale on the sound [ka].
2. Have students speak the word “bad” with energy. Point their attention to the pressure build up behind their lips when producing the consonant “b”.
    a. Have students hold the consonant “b” while maintaining a lowered jaw through closed lips.
    b. While holding this position have the students attempt to breathe out through their nose. They will notice this is impossible, but focus their attention on the pressure against their velum and the raised sensation.[39]
3. Have students speak the word “hung”. Point their attention to the tongue arching up against the velum making sure they are not arching up against the more forward hard palate.
4. Have students perform the exercise, as shown in figure 20, by first singing the word “hung” or “ming” and then holding the position of the “-ng”. This is produced with a lowered velum that touches the tongue. Have students perform the exercise with a

[39] Kayes, *Singing and the Actor*, p 59.

lowered velum and then with a raised velum. The raised and lifted sensation begins on the change from "-ng" to the vowel.

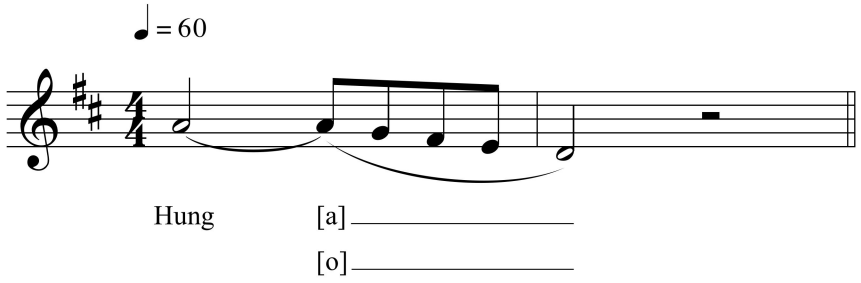

Figure 20. Resonance exercise 4: Exploring velum movement.

Twang Quality

There are two variations of twang quality: nasal and oral twang. Both qualities can be produced alone or in combination with other qualities to add brilliance or bright resonance to the sound. Twang quality can take some time to establish in the voice, although some students will be able to easily perform this quality if it is already present in their speaking voice or is part of their natural attractor state. Beginning with the speech exercises described earlier in this chapter is one way to ascertain whether a student's attractor state is associated with this quality. Those students can be used as vocal models for others who find this quality difficult to produce without tension or strain. Like cry quality, twang quality requires a balanced onset (see fig. 3) with breath that is not forced passed the vocal folds. Students may feel horizontal expansion in both the pharynx and the lips, which can be helpful in achieving twang quality with an elevated larynx. In my experience men have had more success at finding this quality first in their low singing range, as it tends to be naturally present.

Producing nasal twang quality involves a lowering of the velum to mid or lowest level as in the consonants "m" and "n", while narrowing the AES. Nasality can also be produced through, "-ng" in the exercise in figure 18. The mid-level velum is just slightly raised from the "-ng"

position. Begin exploring this sensation by having students in groups tell each other stories about their day in a very nasalized voice. Plugging the nose with the thumb and index finger while listening for change in sound can be helpful to feel the sensations going into the nasal and sinus cavities. Students can then transition into the exercises shown in figures 21 and 22 while maintaining the nasal quality. It is important to note that this sound does not need a lot of effort and students should focus on the consistency of quality while releasing tension. The Estill twang quality is produced with thin folds (see fig. 3) however it can be done with thick folds for a different recipe. As with all qualities be sure to remind students of the "silent laugh" associated with the false vocal fold retraction. This quality can also be added to other qualities or used alone for usage with character voices in musical theatre.

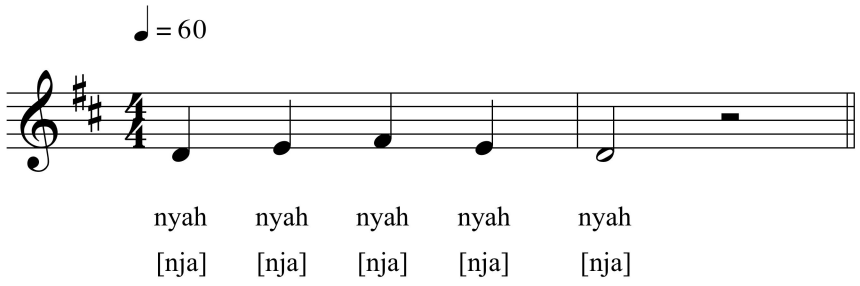

Figure 21. Resonance exercise 5: Exploring nasal twang quality.

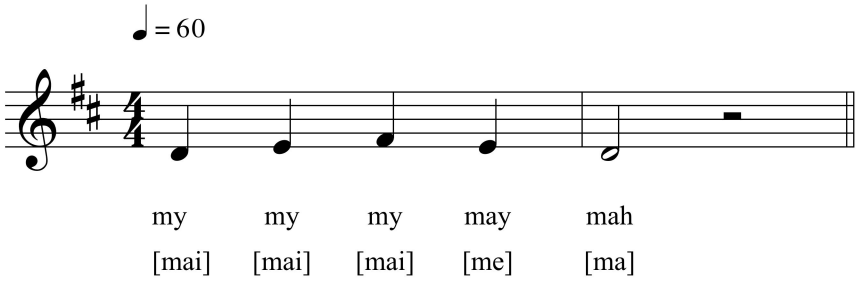

Figure 22. Resonance exercise 6: Exploring nasal twang quality.

Estill's oral twang quality does not involve nasality (see fig. 3) rather it is produced with a high velum and a narrowing of the AES. This quality is a great addition to a song or other

quality as it allows for more presence, ring, and loudness to the sound instead of putting more pressure on the vocal folds. An easy cross over into oral twang from nasal twang is to again sing the previous two exercises in figures 21 and 22 with a raised instead of lowered velum.

1. Have students begin the exercises with nasal twang and then switch to oral twang with a raised velum while maintaining the "brassy edge" to the sound.
    a. It is especially important that students continue to feel the horizontal retraction mentioned before associated with the "silent laugh". Otherwise there can be constriction occurring above the vocal folds leading to vocal fatigue and damage.
    b. Students can check for nasality versus "brassy edge" by plugging their nose. If the sound seemingly goes into the nose it means they are accessing nasal twang and not oral twang.
    c. Students can also feel the laryngeal area with their fingers to check that the larynx is in a higher position. This position should be maintained throughout the exercises. The thyroid cartilage should also be tilted as in cry quality. Remind students of the whimper position.
2. Have students cackle like a witch, meow like a hungry cat, or speak like a child taunting, "nyea, nyea, nyea, nyea, nyea, nyea" [njæ]. Have students imitate the angry cry of a baby, "Wah!"
    a. I tend to find the "meow" [miaou] at a higher effort level can work quite well in finding oral twang. Students can also utilize "neow" and "ngeow". Each time have students prolong the [a] sound in the words while maintaining the "edge"

Make sure the students are also using a high tongue position.[40]

b. Also have students try the exercises shown in figures 23-25 as written and then with different ending vowels.

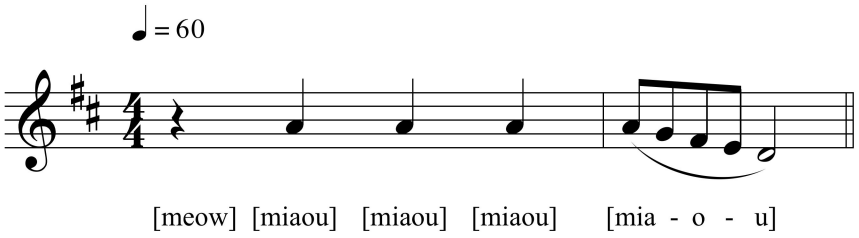

Figure 23. Resonance exercise 7: Exploring oral twang quality.

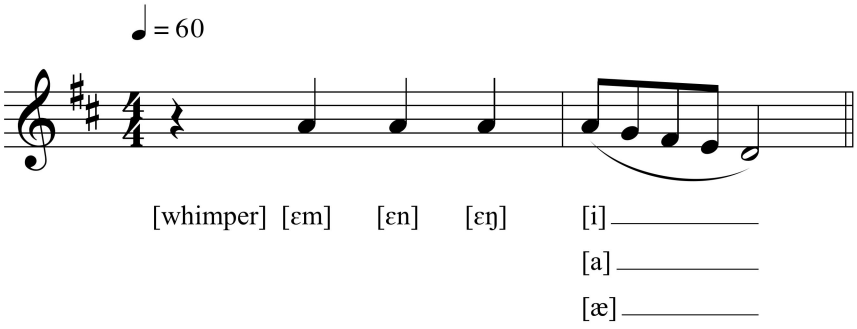

Figure 24. Resonance exercise 8: Exploring oral twang quality.

[40] Adapted from Estill, *Estill Voice Training Level Two: Figure Combinations for Six Voice Qualities*.

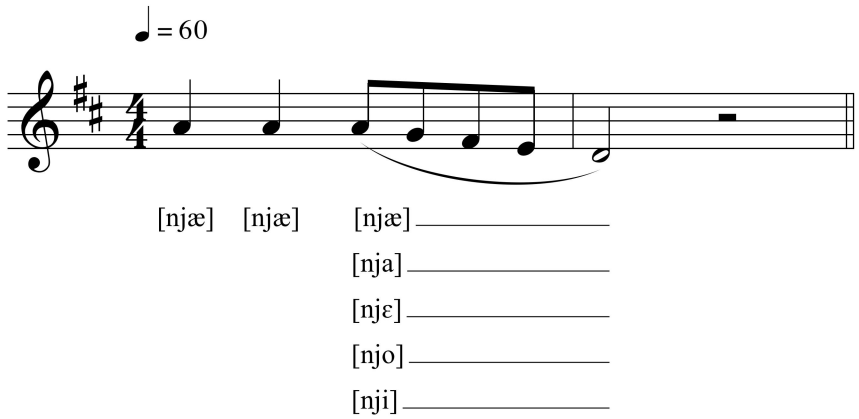

Figure 25. Resonance exercise 9: Exploring oral twang quality.

An important aspect of all vocal qualities explored thus far is to maintain consistency of resonance and sound within each quality throughout the range. This is beneficial in developing students' aural skills connected to the changes within the mechanism. Although the exercises have been written in one key and many with descending intervals, students should explore these exercises throughout their range. An important note is that in the *bel canto* quality the use of *agguistimento,* or vowel modification, is necessary in the high range particularly to unify the resonant qualities of the voice throughout the singers range. Although this document does not discuss vowel modification within the *bel canto* quality many resources are available in this area.[41] In the CCM genres, especially musical theatre, Kayes promotes the usage of vowel medialization. This strategy helps to equalize vowel resonance without the usage of "covering" associated with the *bel canto* quality and can be helpful when performing these exercises throughout the entire range.

[41] For research on vowel modification see Barbara Doscher, *The Functional Unity of the Singing Voice*. 2nd ed. (Metuchen, NJ: Scarecrow Press, 1994); Berton Coffin, *The Sounds of Singing: Vocal Techniques with Vowel-pitch Charts* (Boulder, CO: Pruett Publishing, 1976); and Richard Miller, *The Structure of Singing: System and Art in Vocal Technique* (New York: Schirmer Books, 1996).

> Medializing is a solution to vowel inequality that works well for actors and musical theatre singers. Medializing means "to make in the middle". Specifically, it means that you are making the differences between the vowels in the middle of the tongue rather than front to back. This is in turn will adjust the vowel formants, enabling you to equalize the vowels for resonance. Using medializing you will be more easily heard and more voice-efficient.[42]

Kayes developed a series of exercises to feel the medialization of the back and mid-vowels. Her exercises utilize the initial 'ny' or [nj] sound prior to each vowel to help feel the tongue placement in a mid-position. "The aim of this exercise is to medialize all the vowels without using the initial 'ny' [nj]."[43] Remind students to maintain the raised position of the velum in the exercise shown in figure 26. Vowel medialization is especially helpful in qualities that are produced with a higher laryngeal position and in which bright resonance is desired.

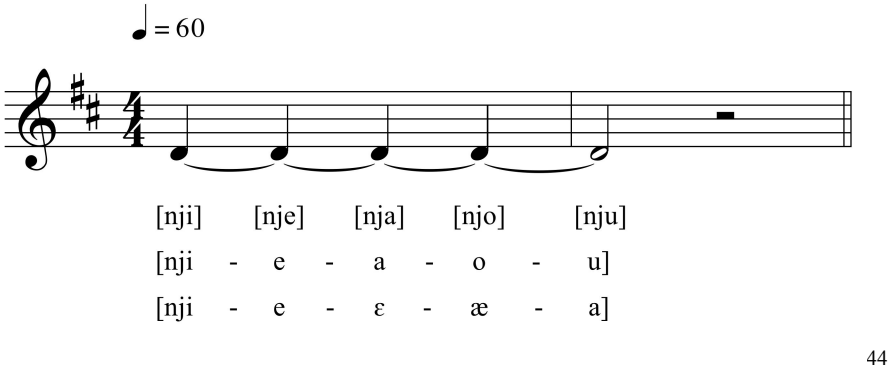

Figure 26. Resonance exercise 10: Exploring vowel medialization

Bel Canto *and Belt Qualities*

Bel canto and belt qualities can be difficult to master effectively as they utilize the extremes of the mechanism and are produced with combinations of previously mentioned vocal

[42] Kayes, *Singing and the Actor*, 100-101.

[43] Ibid.,106.

[44] This is an extension of an exercise developed by Kayes for feeling medialization of vowels. Kayes, *Singing and the Actor*, 106.

qualities. Furthermore, there are also a various approaches to producing both qualities that have been heavily debated. One such example is the varied opinion of classical singing and training in both the choral and opera genres. This document continues to promote the training of *bel canto* technique for classical singing, as its tenets of breath, onset, and resonance are foundational to all healthy vocalism. *Bel canto* quality also incorporates less extreme movement of various components of the mechanism than opera quality. However, opera quality is also a viable option for repertoire that necessitates that ideal.

This section is not the definitive resource on the production of either *bel canto* or belt qualities. Instead, in connection to the rest of this chapter, these are further exploratory strategies of the fundamental components associated with their production, and both will take practice to alleviate unnecessary tensions. However, basic qualities should first be explored as I have found that students trained in only one aesthetic can find it more difficult to branch out into other vocal qualities.

When exploring *bel canto* quality students should first develop an understanding and production of *appoggio* and balanced onset discussed throughout this chapter. As stated in chapter three this quality utilizes a combination of cry, speech, and twang qualities, but with a variable laryngeal position (dependent on the range) and tilted thyroid cartilage. It is advantageous to work on the qualities separately to feel general differences within the mechanism. This quality aims for consistent resonance throughout the range with a balance between bright and dark, *chiaroscuro*. There should be no apparent break between the transition between thin and thick fold qualities used throughout the range.

In my experience it has been beneficial to have students think of cry quality in the higher range with slight twang quality mixed in for brilliance. In the lower range students can also

incorporate more thick folds associated with speech quality into their sound while maintaining a mid to slightly lower laryngeal position. Although a mid or slightly lower laryngeal position is not associated with cry or speech qualities, it can be a helpful starting point to change only one part of the mechanism within those qualities to achieve a more balanced *chiaroscuro*. In the higher range the larynx should be allowed to naturally rise akin to Estill's pure cry quality. Students should be careful not to depress the larynx too low throughout the range or add too much twang during these exercises as that can result in a different quality closer to that of Estill's opera quality. James McKinney's book *The Diagnosis and Correction of Vocal Faults: A Manual for Teachers of Singing and for Choir Directors,* is a helpful guide on working with sounds that are overly bright or dark and provides exercises to help students find a balanced sound.[45] The following exercise can help students begin exploring *chiaroscuro*.

1. Have students explore *appoggio* and balanced onset exercises shown in figures 5, 6, and 16.
2. Have students maintain a relaxed and slightly lowered back jaw, without hyperextending the mouth opening.
3. Have students perform the following exercise in figure 27 while maintaining a high tongue position and a relaxed jaw. Remind students of the silent laugh, raised velum, and the mid to slightly lowered position.

[45] James C. McKinney, *The Diagnosis & Correction of Vocal Faults: A Manual for Teachers of Singing and for Choir Directors*, rev. and expanded ed. (Nashville, TN: Genevox Music Group, 1994).

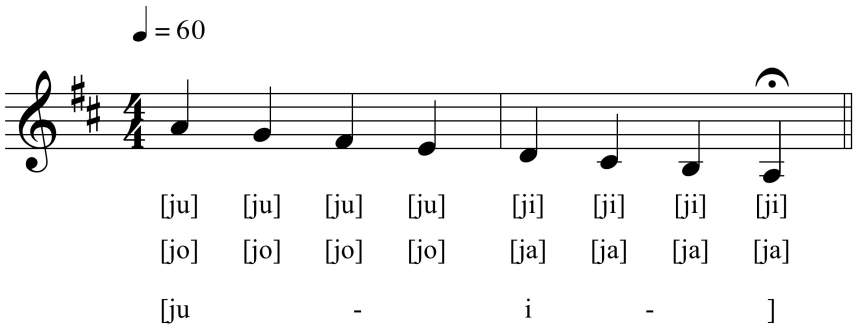

Figure 27. Resonance exercise 11: Exploring *bel canto* quality.

4. In the previous exercise have students focus on maintaining the internal space of the first vowel as they descend. Gradually take away the initial [j]. Also explore various vowel combinations.
5. When listening to the choir exploring these exercises be aware of students that are incorporating too much twang quality or a depressed laryngeal position as they will come through the texture. Take that opportunity to work with them individually within the group rehearsal.
6. Explore variations in quality dependent on each choral section's tessitura. While basses might need more presence by adding twang quality in their low range, sopranos singing in a high tessitura might need more cry quality to balance the chordal harmony.

With regard to belt quality, I have found it easier to first work with other qualities because rarely is an entire piece ever belted from beginning to end. Another effective means to achieving belt is to first master Estill's twang and speech qualities, as they are commonly found within the belt quality. As shown in figure 3, belt quality is a mixture of speech and twang with a cricoid tilt. This varies from pure twang quality in that belt quality utilizes thicker folds found within speech quality. This quality also has the most glottal adduction, longest closed phase, and highest subglottic pressure as discussed in chapter three. In essence students will feel that this quality is

effortful, but should again avoid pushing the breath. Instead they should feel a great deal of connection to the pyramid expansion discussed earlier in this chapter and depicted in figure 4. While exploring these exercises Kayes suggests using a posture in which the head tilts slightly upwards as in "looking up to the Gods."[46] It is important to note that the chin should not be forced outward in this position but instead students should think of the tilting from the top most vertebrae at the atlanto-occipital joint. Students can try utilizing this posture when first exploring this quality to find the cricoid tilt more easily, but the aim is to have a normal head posture when singing belt quality. Remind students to relax and not tense the jaw during these exercises. The muscles involved in belt quality may also fatigue quickly. For example, the muscles used to raise the larynx may be very weak until the singer builds up endurance utilizing those muscles. It is my recommendation, as with any aching muscle, to allow time for rest if fatigue occurs.

1. Have students begin with controlled yelling that is anchored in the breath and body.
    a. Have students start from speech and shout to a friend across a busy street, "Hey there!", mimic hailing a taxi, "TAXI", or an exclamation of "Yes!"[47] Remind students that the larynx is in a somewhat raised position for belt quality and they can feel the larynx while exploring these sounds.
    b. Remind students to continue maintain the retraction above the vocal folds so that there is no constriction. Also remind students to keep the velum raised during these exercises. The tip of the tongue should remain touching the bottom teeth, but the middle and back of the tongue will be quite high towards the top molars. The previous awareness in vowel medialization will help this

[46] Kayes, *Singing and the Actor*, 168.

[47] These exercises are commonly used by Mary Saunders, head of voice instruction for Penn State's B.F.A. music theatre program.

sensation, as the tongue should be arched quite high to help achieve bright resonance.

2. Have students first explore belt quality with the open vowels [ɛ], [a], and [æ]. These can help students feel the horizontal pharyngeal space with a high larynx position. Twang may be present in the following exercise but belt uses thick folds versus the thin folds of twang quality. Remember thick folds are utilized in speech quality and this will feel more effortful. Have students start the following exercise, as shown in figure 28, beginning with twang and then gradually getting louder with a wider and more open version of each vowel. Allow the front of the jaw to drop when performing this at higher pitch levels.

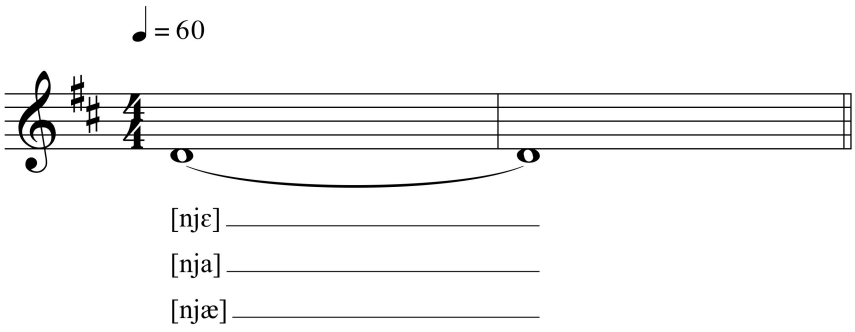

Figure 28. Resonance exercise 12: Exploring belt quality.

3. Have students do the previous exercise in a scalar pattern and on various starting pitches until they are comfortable producing the belt quality without strain. Extending this into the lower range first is sometimes easier than extending it upward. In the following exercise, shown in figure 29, have students first shout the phrase, “Hey, there!” across the room and then sing with the same effort level staying on the first part of the diphthong [ɛ] for the first two notes.

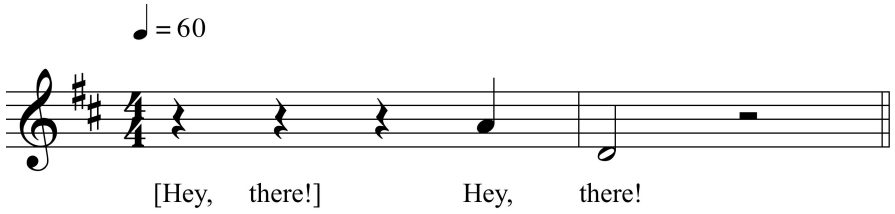

Figure 29. Resonance exercise 13: Exploring belt quality.

Incorporating Vocal Qualities into Various Genres

The vocal qualities discussed within this chapter can be utilized alone and in combination within various CCM styles, variations of *bel canto* quality, and choral music from various epochs. For instance a Brahms motet should be sung with a different vocal quality than a Renaissance madrigal by Thomas Morley. However, for the purposes of this document the focus is on CCM vocal qualities that teachers encounter in choral repertoire. Teachers and students can make educated decisions, based on collaborative research and exploration, as to which qualities to utilize within each genre throughout the range. The qualities chosen should be authentic to the style and fit the text and "affect" of the piece. In addition multiple qualities can be utilized throughout one piece of music and care should be maintained to change vocal qualities as the range increases. For example, speech quality can be hard to maintain in the high register and a change to a thin vocal fold production or to the belt quality would be recommended depending on the desired outcome.

The following can be utilized as a quick guide to vocal qualities and characteristics associated with blues, gospel, jazz, country, rock, pop and musical theatre genres. Additional qualities can be present within each genre listed, however those listed are the most common qualities within each genre according to Soto-Morettini. The blues genre incorporates speech, cry/sob, twang, and belt qualities. Various "bending" and "scooping" effects can occur on the

onset and, "falling off" can occur on the offset. The gospel genre incorporates twang and belt qualities. Various bending can occur on the onset and phrases are often short in order to convey the rhythmic integrity associated with the text. The jazz genre incorporates aspirate, speech, and cry qualities with quick or falling offsets, and a strong sense of swung rhythm. The country genre incorporates speech, cry, twang, and belt qualities with various onsets including creaks, flips, and hard glottal onsets. The rock genre incorporates speech, twang, and belt qualities with various onsets and offsets including flip, glottal, constricted, or rumbles. The pop genre incorporates aspirate, speech, cry, twang, and belt qualities with a wide variety of onsets and offsets. Musical theatre incorporates aspirate, speech, cry/sob, twang, *bel canto*, and belt qualities with varied onsets and offsets dependent on the character being performed and the musical genre.[48]

With the wide variety of vocal qualities across CCM genres it is important to listen to exemplary vocal models in each style in order to make authentic choices. When working with a choir on CCM it can be helpful to allow the choir to be part of the decision making process. More importantly once decided, the choir should focus on maintaining the chosen vocal qualities while listening for matching resonance associated with those qualities. Once students become familiar with these qualities endless other qualities can be created with exploration and permutations of one or more components of the vocal mechanism. Utilizing the exploratory strategies and mechanistic understanding of breath, onset, and resonance listed in this chapter can help students build a multifaceted approach to vocal technique.

[48] This summary was adapted from Soto-Morettini's book *Popular Singing: A Practical Guide to Pop, Jazz, Blues, Rock, Country and Gospel*. I added Estill's terminology of cry/sob quality representative of Sotto-Morettini's neutral thin-fold qualities and speech quality representative of Sotto-Morettini's thick-fold qualities. I also added the genre musical theatre as it is commonly a performed genre in public schools.

CHAPTER 5

CONCLUSION

Through modern science and researcher's understanding of the vocal mechanism, the *bel canto* tradition has been found to be pedagogically ideal and a healthy technique. Many of the early teachings of Garcia and Lamperti have now been proven to be effective through modern science and technology. Research has also found that a singers control of various components within the vocal tract that change vocal quality and resonance, are healthy and crucial for the development of vocal technique needed for CCM. Estill's research shows that singers can manipulate areas of the vocal mechanism independently of one another. In this regard, the effort is moved away from the area of the vocal folds, maintaining vocal health. However, further research is needed on the aspects of vocal health when maneuvering components to their extreme.

I have not found one, all encompassing method that works for all styles and vocal idioms. Although the Estill model is extremely effective in teaching the mechanics and descriptions of the voice related to specific vocal qualities, it does not incorporate sufficient breath understanding, only currently incorporates a limited set of vocal quality recipes, and cannot be considered a pedagogy of learning. However combining the traditional teachings of *bel canto*, current choral pedagogy, and Estill's research can help create a holistic vocal technique that provides singers with the tools to maneuver specific components of the voice, alone and in combination, within the traditional choral rehearsal.

With this understanding, choral teachers can begin working with this knowledge in the choral rehearsal and developing pedagogy for learning. In doing so, teachers continually focus on teaching healthy vocal technique, learning through the national standards, and helping

students understand the mechanism and its connection to sound. These exploratory strategies should be used regularly within the choral warm-up, interrupts, and re-ups. In addition, teachers should utilize individual instruction within the group setting often for assessment, feedback, and modeling purposes. This document provides the outline for learning a series of layers in which each strategy can build upon the previous strategy. These strategies correlate to the main tenets of *bel canto* that are already present within the choral rehearsal: breath, onset, and resonance. In my experience the following order of the main tenets, and their components, help students learn these techniques in the most healthy and effective manner: breath management; speech and vowel awareness; varied onsets; and changes within the mechanism affecting resonance, including but not limited to, thick or thin folds, laryngeal height, pharyngeal width, AES width, velum height, tongue height, and jaw and lip tension. Vocal qualities can be taught in conjunction with the main tenets, however, I have found it beneficial to introduce aspirate, speech, cry/sob, and then twang qualities prior to *bel canto* quality. This allows students to explore the main components of each quality prior to working with qualities in combination.

The approach to vocal technique outlined in this document helps meet the ever-changing demands on current vocal educators. In today's society the choral teacher has multiple duties and responsibilities beyond conducting, including director, teacher, instructor, vocal coach, mentor and leader. These demands require the choral teacher to be knowledgeable in a variety of musical skill sets and styles which cannot fully be addressed within the typical four-year undergraduate degree program. Hence most teachers lack experience and education in the areas of CCM and popular musical pedagogy. However, with training, choral directors can become successful at teaching technical, aural, and expressive musical skills in a variety of contemporary styles and genres.

Many choral teachers have undergone vocal training and gleaned basic understanding of the voice and western classical techniques, but what happens when the choral teacher is hired to be the vocal director of the school musical? What happens when the choral teacher is asked to create a show choir, a cappella popular ensemble or any other contemporary vocal group? How can teachers, not trained in CVT, meet the demands of the current generation's desire to learn singing techniques related to CCM? Furthermore, colleges and universities should offer courses that teach pedagogical skills and CVT associated with CCM. To achieve this end, collegiate choral and voice faculty need to acquire training outside of the traditional western classical technique.

The reality is that many choral directors would be at a loss in approaching these styles from a healthy, authentic, and meaningful way. The lack of specified training in these areas is prevalent in music education forcing teachers to utilize personal experiences with these genres instead of teaching from an educated background. In my experience as a choral director in public education at both the middle and high school levels, I understand the need for knowledge in CVT and pedagogy. I too lacked the education in these areas and relied only on my personal aesthetic and previous performing experiences.

Simply ignoring CCM repertoire cannot be the answer, as our students need knowledge of diverse musical styles and vocal technique that prepares them to perform all genres of vocal music they may encounter. It is equally important that teachers have the knowledge to teach CVT from the standpoint of vocal health. Without this knowledge directors run the risk of inhibiting a student's growth in areas other than classical musical training, or teaching contemporary styles with only a cursory experiential knowledge causing possible harm to their student's voices.

A new methodology is needed to help teachers successfully teach vocal technique that encompasses understanding mechanistic movement and qualities associated with western classical tradition and CCM. This document utilizes the main tenets of the *bel canto* tradition to help students learn vocal technique from the basic pillars of breath management, onset, and resonance. As evidenced by the literature reviewed in chapter two and three, these main pillars are important in both *bel* canto and CVT. Combined with Estill's research and further work with EVTS™, students and teachers can explore the mechanistic changes that produce a variety of vocal qualities described in chapter four. Furthermore, this document empowers teachers to discuss vocal technique related to the students' current experience. Some students will be more successful at certain qualities than others and it can help students build confidence rather than feel as though their voice is "not good" if they can't sing in the traditional way from the outset. It also allows for a collaborative rehearsal process that focuses on the individual within the group setting. It is the hope that the choral teacher will have the opportunity to provide constant feedback throughout the exploratory process and demystify vocal technique. This shift in paradigm can help students authentically explore diverse repertoire of all vocal styles, in turn achieving growth in their singing technique and pedagogical understanding. Connecting the learning of CVT with the framework of age-old principles of healthy singing and exploration can greatly expand the proficiencies and competencies of the present day vocal student.

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APPENDIX A

INTERNATIONAL PHONETIC ALPHABET

IPA – English word with vowel

[æ] – Bat

[a] – Bob

[e] – Bate

[ɛ] – Bet

[i] – Beet

[I] – Bit

[o] – Boat

[ɔ] – Bought

[u] – Boot

[ʊ] – Book

IPA- English word with consonant

[h] – (H)i

[j] – (Y)ou

[k] – (K)it

[m] – (M)y

[n] – (N)ame

[ŋ] – Ba(ng)

[nj] – O(ni)on

[v] – (V)iolin