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Gendered Singing Training: A Comparison Of Estelle Liebling and Richard Miller's Strategies for Teaching Across Fach.

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GENDERED SINGING TRAINING: A COMPARISON OF ESTELLE LIEBLING AND RICHARD MILLER'S STRATEGIES FOR TEACHING ACROSS *FACH*.

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ABSTRACT

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In the classical singing field, vocal *Fach* is an important part of a singer's identity. *Fach* classification is initially assigned by gender and further separated within each gender based on characteristics of sound and appearance. There is significant debate over the similarity of techniques used to teach each *Fach.* Discussion among singers and the prevalence of publications related to training one specific voice type suggests that there are notable differences in technique across *Fach,* and by extension, gender. This research compares Richard Miller's books on soprano, tenor, and baritone voice training with Estelle Liebling's courses for soprano, mezzo-soprano, tenor, and bass to determine areas of differing technique between voice types. This comparison also underscores the differences in perspective based on the gender of the teacher, highlighting Liebling's perspective on teaching male voices and Miller's perspective on teaching female voices. Topics addressed include breathing, registration, and resonance. This dissertation is intended to be a tool for teachers to communicate more effectively across gender.

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This dissertation is dedicated to my parents, Jerry and Eileen Beinhauer, who worked tirelessly to provide me with the singing training that laid the foundation for all my future work. Thank you for all your love and support.

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GLOSSARY

Aggiustamento. Italian for "adjustment." Describes the gradual modification of vowels as pitch ascends.

Appoggio. From the Italian *appoggiare,* "to lean." Describes the technique of breath management that requires maintaining an inspiratory posture during singing.

Appoggio della nucca. Italian for "lean of the neck." A technique that advocates the lengthening of the back of the neck and avoidance of chin and head movement for pitch adjustment.

Baritone. A type of male voice with a lower range than the tenor, typically from G2 to G4. Often characterized by a warm, full timbre.

Bass. A rare type of male voice with the lowest range, typically from E2 to E4. Often characterized by a deep, rich timbre.

Bass-Baritone. A type of male voice with a lower range than the baritone, typically from F2 to F4. Often characterized by a dark, powerful timbre.

Bel canto. Italian for "beautiful singing." Describes a type of operatic singing that was made popular in the late 18th century. This style emphasized balanced resonance, *chiaroscuro* timbre, and appearance of effortless technique.

Castrato. A male singer castrated before puberty to retain a high pitch range. Popular in the 17th and 18th centuries.

Chiaroscuro. Italian for "bright-dark." Taken from the Art term describing balance of highlight and shade. In singing, it refers to a balance of bright and dark elements of timbre.

Contralto. A rare type of female voice with the lowest range, typically from E3 to E5. Often characterized by a deep, rich timbre.

Countertenor. A type of male voice who has developed the range of a female mezzo-soprano or soprano. This voice type was adapted to approximate the sound of the castrato singer.

Fach. German for "compartment." Describes the set of operatic roles that a signer may be expected to perform. *Fach* choice is based on vocal range, timbre, skillset, physical appearance, and market trends.

Impostazione della voce. Italian for "placement of the voice." Describes a type of resonance strategy that emphasizes balancing the tone between multiple resonating chambers.

La lutte vocale. Italian for "the vocal contest." Describes the dynamic balance between subglottic breath pressure and vocal fold approximation.

Mezzo-Soprano. A type of female voice with a lower range than the soprano, typically from A4 to A6. Often characterized by a warm, dark timbre.

Primo Passaggio. Italian for "first passage." Describes the point where the chest register ends and the middle register begins.

Register. A series of consecutive pitches with similar timbre.

Resonance. The relationship between two vibrating bodies that occurs when a sound wave propagates off a surface, resulting in an increase of amplitude (volume).

Secondo Passaggio. Italian for "second passage." Describes the point where the middle register ends, and the head register begins.

Singer's Formant. A band of harmonics around 2,500 to 3,500 Hz. Provides the characteristic "ring" of the classical voice. For a comprehensive explanation of acoustics and its application to voice training, see Kenneth Bozeman's *Practical Vocal Acoustics*.

Soprano. A type of female voice with the highest range, typically from C4 to C6. Often characterized by a light, brilliant timbre.

Tenor. A type of male voice with the highest range, typically from C3 to A5. Often characterized by a bright, energetic timbre.

Tessitura. Italian for "texture." Describes the range of pitches in which the majority of a song lies.

Timbre. Describes a characteristic that allows a sound to be distinguishable from other sounds.

Voce completa. Italian for "complete voice." Describes a timbre with a balanced *chiaroscuro* timbre.

Voce piena in testa. Italian for "full voice in head." Describes the highest register of the male voice, characterized by a mixed timbre that retains some chest voice qualities and an increase of breath energy.

CHAPTER I

INTRODUCTION

In the Western classical singing tradition, the German classification system known as the *Fachsystem* is used to describe common vocal characteristics for the purpose of consistency and convenience in casting. *Fach* is an important part of a singer's identity. *Fach* choice is typically narrowed down based on gender and then further determined by factors of sound and physical appearance. Chapter II provides an overview of the *Fach* system and its relation to gender and traditional voice classification. Many voice teachers argue that there is no significant difference in technique and training based on *Fach* or gender. However, discussion among singers suggests that there is a difference in kinesthetic sensations (the sensory perception of movement, proprioception) and optimal strategies for (biologically assigned at birth) female and male singers.

Singers routinely work with teachers of opposite gender with great success. However, there are numerous examples of singers describing technical issues that they believe arose because of a technique suited for the opposite gender. Even I struggled to overcome a technique of extreme subglottal pressure and depressed larynx that led two bass-baritones with the same teacher to success at the Metropolitan Opera and other national and international houses of note. I began to think that different techniques are more suited to some voice types than others. Many similar examples to my situation seemed to be delineated by gender, and by extension, *Fach.* Does this disconnect result from a lack of gender specific training in teachers or a miscommunication between teacher and student? Just as a French horn player is better off learning from another French horn player than a trumpet player, so a soprano may benefit more

from studying with a soprano, or even a mezzo-soprano. Many of the techniques are similar, but there are differences between the instruments that require a more detailed approach. It is not the same thing to understand a voice theoretically and to understand a voice kinesthetically. To what extent can teachers guide a student through a register transition that they understand theoretically but does not exist in their own voice? In some respects, students can benefit from the perspective of a teacher with a similar instrument.

Throughout my voice studies, I have been exposed to numerous vocal pedagogy texts, treatises, and exercise books. It was not until my doctoral studies that I was assigned a text with a female author. This text, *What Every Singer Needs to Know About the Body*,[1] was written in part by my teacher, Dr. Melissa Malde, together with MaryJean Allen and Kurt-Alexander Zeller. It suddenly struck me that this was the first published female perspective I had encountered in eight years of academic study. In such a female-dominated field as voice teaching, I was surprised to realize how male-dominated vocal pedagogy publishing was.

As I began looking back through my textbooks, I read numerous examples of male authors describing how to teach female voices. It led me to wonder what the female voice teachers had to say and to what extent the female teachers' techniques overlapped with the male teachers. In many ways, I felt that I was primarily hearing men describe women's voices. Ultimately, I wondered if there was a difference between vocal technique for male and females, how techniques overlapped, and how the gender of the teacher influences their teaching of specific *Fächer* (plural of *Fach*).

A considerable number of *Fach*-specific publications would suggest that differences do exist. While many authors have written guides on teaching one specific voice type, two authors

[1] Melissa Malde, Mary Jean Allen, and Kurt-Alexander Zeller, *What Every Singer Needs To Know About the Body*, 3rd ed. (San Diego: Plural Publishing, Inc., 2017).

stand out for publishing guides for all the main voice types: Estelle Liebling and Richard Miller. Chapter III offers biographical sketches of Estelle Liebling and Richard Miller to offer insight into their vocal lineage and teaching experience.

Before I describe the dissertations goals in more detail, let me make clear the limitations of the study. The voice types discussed in this document are the standard male and female voice types: soprano, mezzo-soprano, contralto, tenor, baritone, bass-baritone, and bass. A discussion of vocal training for transgender or gender non-conforming singers is beyond the scope of this document. An area of opportunity for further research may lie in an evaluation of the effectiveness of the techniques discussed in this document for transgender singers.

This dissertation seeks to highlight the similarities and differences in vocal technique between *Fächer,* based on the writings of Estelle Liebling and Richard Miller. The *Estelle Liebling Vocal Courses* are available for all four major voice types – soprano, mezzo-soprano/contralto, tenor, and baritone/bass. Richard Miller's *Fach*-specific publications include *Training Soprano Voices, Training Tenor Voices,* and *Securing Baritone, Bass-Baritone, and Bass Voices.* An important aspect of this study is viewing the female perspective on teaching male voices and the male perspective on teaching female voices. This dissertation evaluates the female- and male-specific techniques described in the *Estelle Liebling Vocal Courses* and Richard Miller's books to highlight the similarities between the male and female teaching perspectives. Chapters IV provides the basic techniques espoused by both authors and Chapters V and VI gives detailed explanations of how the prescribed techniques apply to soprano, mezzo-soprano, and contralto; and tenor, and baritone, bass-baritone, and bass voices, respectively. Topics evaluated include respiration, registration, and resonance.

It is my hope that the guidelines provided in this study will allow teachers and students to understand how the gender of the teacher can influence their instruction and help teachers to

communicate more effectively across genders and empower students to navigate the learning process as an active collaborator.

CHAPTER II

FACH DESIGNATIONS

To appreciate the arguments regarding technical differences between voice types, it is important to understand what criteria is used to determine voice type and how it relates to cultural and physiological factors. To that end, the following chapter provides a brief overview defining the *Fach* system, the characteristics that influence its use, and the relationship between gender and voice typing.

Definition of *Fach*

Fach is a German word that refers to the system of voice typing used to delineate sub-categories of standard voice types. Its literal translation is "compartment" and in its most detailed format, the system breaks down each major voice classification (soprano, mezzo-soprano, tenor, bass) into many different compartments. The *Fach* system assigns a list of roles with similar vocal demands to each voice type. For singers, the *Fach* system was a protection against being pressured into singing roles that were not healthy or appropriate for their voice type. For theatres, it is primarily a business consideration that allows them to narrow down the casting process based on the *Fächer* needed for their season. Nevertheless, assigning the name of a *Fach* to a person, as many in the field do, is a false association.[2] One cannot *be* a Soubrette, one is suited to Soubrette repertoire. Vocal characteristics certainly influence one's choice of *Fach*, but it is just that, a choice, based on commercial fashions of the time and place. Voice type, on the other

[2] Sandra Cotton, "*Fach* vs. Voice Type: A Call for Critical Discussion," *Journal of Singing* 69/2 (Winter 2012), 156.

hand, is based on the physiological capabilities and limitations of an instrument and is not subject to trends or preference.[3]

Although the term *Fach* is widely used throughout the opera field, the names and characteristics of the associated *Fächer* differ between the major national schools of singing. The German system is extremely strict and detailed in their descriptions of each type, while other European and North American systems tend to use Italian and English translated *Fach* names and combine them into fewer categories.

Vocal Characteristics of *Fach*

Many factors contribute to the choice of *Fach* for casting purposes. The *Fach* system is organized around the four traditional voice types: soprano, mezzo-soprano, tenor, and bass. Assignment to one of these four types is based on gender, range, tessitura, and *passaggi*. The factors that influence *Fach* assignment within the voice type also include comfortable range and tessitura, but add vocal color and weight, agility and sostenuto skills, and appearance.

Esteemed vocologist Ingo Titze suggests that voice classification is based on physiological differences such as laryngeal size, vocal tract size, and muscle composition, in addition to social/commercial considerations.[4] According to his classification scheme, fundamental frequency, or pitch, is the most important variable for classifying voices. However, vocal range alone is not sufficient to determine the differences in voice types within each gender, because the average vocal range for each voice type overlaps with the neighboring voice types. Figure 2.1 shows a voice range profile for the three standard female voice types: soprano, mezzo-soprano, and contralto. The amount of overlap in Figure 2.1 shows that the difference in

[3] Cotton, "*Fach* vs. Voice Type," 157.

[4] Ingo Titze, *Principles of Voice Production,* 2nd ed. (Iowa City: National Center for Voice Studies, 2000), 185.

range is negligible and in the case of hybrid voices[5] such as dramatic sopranos, the range difference may be counter to what is shown.

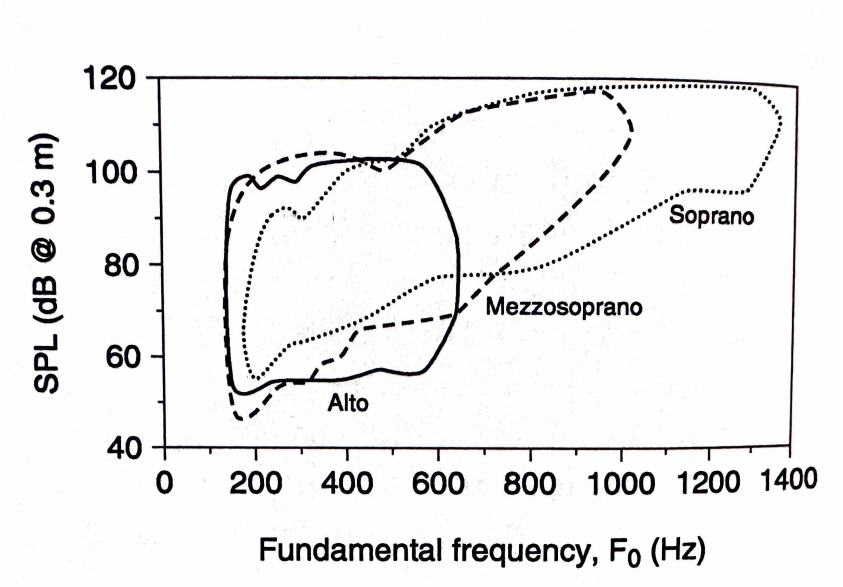

FIGURE 2.1. A Voice Range Profile (VRP). VRP that displays the overlap in the average pitch range of the soprano, mezzo-soprano, and contralto voice type.[6] Reproduced with permission of Ingo Titze.

The opinion that range is the primary consideration for *Fach* can be traced to early voice treatises. Johann Friedrich Agricola (1720–1774) asserted that range is the only consideration and went further to insist that range is a physiological constant, not affected by technique or training.[7] This opinion likely results from a growth in the intersection of science and voice training that began in the late 18th century. Agricola associated tracheal size with voice type, a misbelief that is still prevalent today. In *Training Tenor Voices,* Richard Miller discusses the common beliefs of tracheal size as well as other outward physiologic and anatomical factors –

[5] Titze, *Principles of Voice Production*, 192.
[6] Titze, 192.
[7] Johann Friedrich Agricola, *Introduction to the Art of Singing* [1757], trans. Juliann Baird (Cambridge: Cambridge University Press, 1995), 80.

such as neck length and width, torso circumference, and height – that are often associated with various voice types.

There is no standard correlation between a single anatomical factor such as neck length and the resulting voice type. A tenor may have a short or long neck and still have the range of a tenor. However, a combination of factors such as vocal fold length and vocal tract length and shape, create a composite sound that is the basis for the many subcategories of the *Fach* system.

A direct correlation can be found between the length of the vocal fold membrane and the accessible pitch range. This is apparent when examining the difference between male and female vocal anatomy. The male vocal fold membrane is 60% longer than the female.[8] The formula for vibrating strings shows us that the shorter the length of the string (in this case, the membranous vocal fold), the higher the frequency produced.

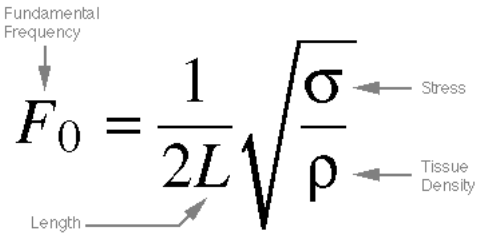

FIGURE 2.2. The Formula for Vibrating Strings. L is the length of the vocal folds, sigma is the longitudinal stress of the vocal folds (refers to the stretching of the muscles), and rho is the tissue density of the vocal folds (approximately 1.3 gram/mL).[9] Reproduced with permission of Ingo Titze.

Estelle Liebling supplies the metaphor of the strings of a piano to describe the acoustic relationship of range to vocal fold anatomy. For chest voice, Liebling compares the lowest pitches of a piano, which have the longest strings, to vocal cords vibrating along their full length on low pitches in chest voice. This metaphor is apt for teaching the basic theory of pitch but does

[8] Titze, *Principles of Voice Production*, 187.

[9] National Center for Voice and Speech, "Chapter 8: Control of Fundamental Frequency," https://ncvs.org/archive/ncvs/tutorials/voiceprod/equation/chapter8/, accessed 13 October 2023.

not take into account the differences between range and tessitura that influence voice type. The amount of longitudinal stress placed on the vocal folds has a direct relationship with ease of singing. While range is an important factor in determining voice type, singing in a tessitura that requires only comfortable effort is paramount to the longevity of a voice.

Perception of vocal color is subjective and therefore difficult to standardize across the field. Titze suggests that vocal tract length is directly proportional to the perception of darkness in timbre, while vocal fold membranous length determines pitch range.[10] This inverse relationship between formant frequencies and vocal tract length means that a longer vocal tract will dampen a larger number of high frequencies, resulting in the perception of a darker tone. The minimum and maximum lengths of the vocal folds and the vocal tract are governed by individual anatomy. Nevertheless, singers do have some degree of physical control over the length and shape of their vocal tract.

Relation of Gender to *Fach* Classification

Voice type typically aligns with the traditional gender binary. This is primarily due to the pitch differences in vocal range between male and female voices because of physiological differences previously discussed. The extent to which these acoustic differences impact *Fach* relates to societal preconceptions about the significance of voice.

As digital access to opera increases, the art form is becoming subject to the same visual expectations as television and movies. The impact this will have on artists is an increased expectation for their appearance to match the sound of their voice. How this applies in specific terms evolves as trends for appearance change, but the traditional associations of voice with gender have remained constant throughout recent history. Culturally, femininity is associated with high voices and masculinity with low voices. These associations extend on a micro level

[10] Titze, *Principles of Voice Production*, 187.

within the voice types themselves. The highest soprano *Fach,* the lyric coloratura soprano, often portrays characters who are innocent, cheerful, and young – all traditionally desirable feminine traits. The lower female *Fächer* are often associated with more masculine traits – the promiscuous and sultry mezzo-soprano or the contralto as a witch or old hag.

Certain voice types do not fit the standard pairing of range and gender. One such example is the countertenor *Fach*, a modern adaptation to approximate the vocal style of the castrato. "Countertenor" implies a male singer whose range is developed to be similar to that of a mezzo-soprano or soprano and who performs some roles that may overlap with these female voice types.

Another modern example of gender and voice type standards diverging is the success of baritone Lucia Lucas as the first female Don Giovanni. Lucas was assigned male at birth and affirmed her gender presentation after developing her post-pubescent baritone voice. In situations of gender transition or affirmation, the standard labels and technical considerations must be reevaluated to fit the individual's preference and circumstances. Extensive resources have become available that are dedicated to training voices that are in transition, in post transition, or are non-gender conforming. Introductions to these topics include *The Singing Teacher's Guide to Transgender Voices*[11] and *Queering Vocal Pedagogy*.[12]

[11] Liz Jackson Hearnes and Brian Kremer, *The Singing Teacher's Guide to Transgender Voices* (San Diego: Plural Publishing, Inc., 2018).

[12] William Sauerland, *Queering Vocal Pedagogy: A Handbook for Teaching Trans and Genderqueer Singers and Fostering Gender-Affirming Spaces* (New York: Rowman & Littlefield Publishers, 2022).

CHAPTER III

BACKGROUND ON THE SUBJECT AUTHORS

To fully appreciate the differing perspectives of the two subject authors, it is important to look at their vocal lineage and early study, as well to explore the big picture of their careers as singers and teachers. Several differences in the backgrounds of these subjects can go toward explaining variances in their technical approaches. One such difference is the period in which they operated. The lifetimes and active years of Richard Miller and Estelle Liebling are separated by approximately forty years, which may highlight some technical differences that have been influenced by the changing landscape of opera from the late 20th century into the early 21st century. Another difference is their respective vocal lineage. Richard Miller's lineage is exclusively male, while Estelle Liebling's lineage is both male and female. This has the potential to identify the influence of gender on their own learning and to trace this influence into their own publications.

Despite the differences inherent in their backgrounds, these two authors both chose to publish individual singing guides relating to each voice type. Most authors of singing books publish a single guide that applies to all singers or publish a guide for an individual *Fach* about which they are an expert. The choice to publish their technique guides in this way shows a similarity in thought regarding the commercial audience for book sales. Whether this similarity in thought extends to technical aspects is expanded upon in later chapters.

Biographical Sketch of Estelle Liebling

Estelle Liebling (1880–1970) was born in New York City to a Jewish family of musicians. Her father, Max Liebling, as well as her uncles, were pupils of Franz Liszt. Estelle Liebling's three brothers also studied piano and eventually settled on careers in music, one as a cellist and another as a music critic. Estelle also began her studies as a pianist but found success as a coloratura soprano, making her career debut in Dresden at just eighteen years old. After a few successful years performing in Europe, she began touring with John Philip Sousa and his band from 1902–1905. This tour comprised 1,600 performances, a testament to Liebling's stamina and technical prowess.

Early in her voice studies she was a student of Selma Nicklass-Kempner (1850–1928), but after her European debut she became acquainted with the famous soprano Nellie Melba who suggested she study with Melba's own teacher, Mathilde Marchesi (1821–1913). Despite the time she spent studying with Nicklass-Kempner, Liebling credited Marchesi with her training. In Liebling's own words in the preface to Marchesi's *Thirty Vocalises,* she credited Marchesi as her teacher and called her "one of the greatest teachers of singing the world has ever known."[13]

Mathilde Marchesi was a student of Manuel Garcia II, the oft-espoused father of voice science. This lineage no doubt provided Marchesi with a scientific perspective on singing that other vocal techniques of the time had yet to incorporate. Marchesi is known for her many pupils who became successful performers, including Dame Nellie Melba. However, her only student to publish was Liebling. Stratton aptly reasons that this signifies Marchesi's skill as a teacher:

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[13] Mathilde Marchesi, *Thirty Vocalises for High Voices,* ed. Estelle Liebling (New York: G. Schirmer, 1941), 3.

> But though this vocal longevity testifies to the practical excellence of the [Marchesi] method, it had one unfortunate consequence: hardly one of [her students] taught other singers, and the few who did, did not teach long enough to become really accomplished at it. Except as preserved in their numerous recordings, the Marchesi method died with Marchesi's pupils.[14]

Estelle Liebling was the last member of this lineage to publish her technical method, as none of her own students followed her example into publishing. Stratton's suggestion that the Marchesi method died with her pupils is an affront to the published legacy left by both Marchesi and Liebling.

Following her tour with Sousa, Liebling married Arthur Mosler, a wealthy heir to the Mosler Safe Company and settled in a luxurious midtown penthouse where she began her private studio. Except for a three-year stint at the Curtis Institute from 1936–1939, which ended because of financial constraints due to the ongoing economic depression, Liebling taught in this private studio for over fifty years.

Liebling's students comprised a diverse group of ages and vocal styles. Liebling taught an estimated seventy-eight stars of the Metropolitan Opera including Titta Ruffo and Beverly Sills. Beverly Sills began her training with Liebling at seven years old. It is not known if this was a special circumstance or if Liebling routinely worked with children in her studio. Liebling was also well known for her work with radio personalities like Jessica Dragonette and film actors like Joan Crawford and Meryl Streep.

Estelle Liebling published a considerable amount of music as a composer or arranger in addition to her nine books on singing. Much of Liebling's arrangements focus on soprano repertoire, particularly the coloratura soprano. *The Estelle Liebling Coloratura Digest,*[15] now

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[14] John Stratton, "Operatic Singing Style and the Gramophone," *Recorded Sound* 22-23 (April–July 1966), 59.

[15] Estelle Liebling, *The Estelle Liebling Coloratura Digest* (New York: G. Schirmer, Inc., 1943).

titled *The Estelle Liebling Book of Coloratura Cadenzas,*[16] is still widely used. Other publications include *Music: Art Music and Literature Keep Memory Alive,*[17] *Fifteen Arias for Coloratura Soprano,*[18] *The Aria: Renaissance and Baroque, from the Parisotti Collection, vol. 1 and 2,*[19] and *Diva Bravura: Coloratura and Operatic Arias*.[20]

Biographical Sketch of Richard Miller

Richard Miller (1926–2009) was born in Canton, Ohio. Miller began singing from a young age and amassed hundreds of local performances to his credit even before his voice matured. An accomplished instrumentalist, Miller played the cello, piano, and organ. Upon graduating high school, he was drafted into a tank division in the European front during World War II. Near the end of his deployment, he took voice lessons at the Marseilles Conservatory with Edouard Tyrand. After receiving his Master of Music degree in Musicology from the University of Michigan, he was awarded a Fulbright scholarship to study in Rome. During this time, Richard Miller was a student of Luigi Ricci, a vocal coach at the Accademia Nazionale di Santa Cecilia. Like Miller, Ricci was a musically talented child. Ricci began accompanying voice lessons given by Antonio Cotogni, a close colleague of Giuseppe Verdi and Giacomo Puccini, at the age of twelve. Very little is known of Cotogni's vocal lineage and training except that he trained with Achille Faldi, of whom no information could be found.

Ricci published several books of cadenzas and variations, a memoir, and a performance manual for the music of Puccini. Perhaps one of his most important influences on Richard Miller was an appreciation for traditional bel canto technique, reinforced by Ricci's motto, passed down

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[16] Estelle Liebling, *The Estelle Liebling Book of Coloratura Cadenzas* (New York: G. Schirmer, Inc., 1943).

[17] Estelle Liebling and Laurence B. Ellert, *Music: Art Music and Literature Keep Memory Alive,* 2nd ed. (Cincinnati, Ohio: The Willis Music Company, 1940).

[18] Estelle Liebling, *Fifteen Arias for Coloratura Soprano* (New York: G. Schirmer, Inc., 1944).

[19] Estelle Liebling, *The Aria: Renaissance and Baroque, from the Parisotti Collection,* Vols. 1 and 2 (New York: Franco Colombo Publications, 1963).

[20] Estelle Liebling, *Diva Bravura: Coloratura and Operatic Arias* (New York: G. Schirmer, Inc., 1963).

to him from Cotogni, "Queste sono le tradizioni ea queste dobbiamo attenderci (these are the traditions and these we must hold)."[21]

Following his Fulbright studies in 1957, Miller returned to the United States and began his teaching career. Working primarily in academia, Miller taught at the University of Michigan from 1957–1962, at Baldwin-Wallace University from 1962–1964, and at the Oberlin Conservatory of Music from 1964 until his retirement in 2006. Like Liebling, Miller's teaching career spanned nearly fifty years. Miller's notable students are all opera singers, including Edith Wiens, David Miller (Il Divo), and Daniel Okulitch. A prolific author, Miller has published numerous articles and seven books, including those examined in this document: *Training Tenor Voices*,[22] *Training Soprano Voices,*[23] and *Securing Baritone, Bass-Baritone, and Bass Voices*.[24] Other books that are not *Fach* specific include *National Schools of Singing: English, French, German, and Italian Techniques of Singing Revisited,*[25] *Singing Schumann: An Interpretive Guide for Performers,*[26] *Solutions for Singers: Tools for Performers and Teachers*,[27] *On the Art of Singing*,[28] and *The Structure of Singing: System and Art in Vocal Technique*.[29]

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[21] Peter Berne, "Luigi Ricci and the Oral Tradition in Italian Opera," *https://www.peter-berne.at/luigi-ricci/* (2022), accessed 13 October 2023.

[22] Richard Miller, *Training Tenor Voices* (Vancouver: Schirmer Books, 1993).

[23] Richard Miller, *Training Soprano Voices* (Oxford: Oxford University Press, 2000).

[24] Richard Miller, *Securing Baritone, Bass-Baritone, and Bass Voices* (Oxford: Oxford University Press, 2008).

[25] Miller, *National Schools of Singing: English, French, German, and Italian Techniques of Singing Revisited, 2nd ed*. (New York: Scarecrow Press, 1997).

[26] Richard Miller, *Singing Schumann: An Interpretive Guide for Performers* (Oxford: Oxford University Press, 2005).

[27] Richard Miller, *Solutions for Singers: Tools for Performers and Teachers* (Oxford: Oxford University Press, 2004).

[28] Richard Miller, *On the Art of Singing* (Oxford: Oxford University Press, 1996).

[29] Richard Miller, *The Structure of Singing: System and Art in Vocal Technique* (New York: G. Schirmer, Inc., 1986).

CHAPTER IV

THE BASICS

Respiration

Breathing for singing is a controversial topic among singers. Arguments on the type of abdominal muscle movement correspond to techniques colloquially known as "down-and-out" and "up-and-in" as well as the Italian *appoggio* system. Richard Miller and Estelle Liebling are no exception to this argument. One area of difference is in their wording when describing the breathing process. Liebling describes "breath control" as "knowing how much breath to take in, knowing how to inhale deeply, and knowing how to CONTROL the amount of breath you exhale."[30] In Miller's *Solutions for Singers,* he describes the "5 Components of Breath Management" which include (1) quiet initial inhalation, (2) clean inception of sound, (3) duration of phonation, (4) precise termination of sound, and (5) immediate breath replenishment."[31] The difference between connotations of the words "control" versus "management" are reflected in the part of the breathing process on which each focuses. Liebling describes two steps regarding inhalation but treats the exhalation process as a static single step. The use of the words "control" and "support" reflect the idea that one guards the air inside one's body. Miller's use of "management" indicates a belief that breath is meant to be used rather than hoarded. Miller only requests that the initial inhalation remain quiet and then focuses on several

[30] Estelle Liebling, *The Estelle Liebling Vocal Course for Tenor: Lyric and Dramatic Tenor* (New York: Chappell, 1956), 7.

[31] Miller, *Solutions for Singers*, 31.

steps of exhalation, including onset and resisting the collapse of the ribs before the offset leads to the new inhalation.

According to both authors, the most important pre-requisite for good breathing is good postural alignment. However, the details of this alignment differ. Liebling recommends an exercise for aligning the back of the heels, hips, shoulders, and head by standing against a wall to find appropriate posture. This exercise places the weight of the body onto the heels. The illustrations in her text also show a rear-leaning alignment of the upper body (Figure 4.1). Miller's suggestions for postural alignment specify placing the weight just in front of the arch of the foot, not on the heels. Miller also describes the alignment of the head, neck, and sternum over the pelvis and hips. The use of anterior anatomy to describe alignment automatically encourages the singer toward a more forward-leaning position. Miller also suggests "the Garcia position." A reference to the singer and vocal pedagogue Manuel Garcia II, the Garcia Position directs the singer to stand with hands behind the lower back, palms facing out to allow free movement of the abdomen and correct alignment of the front body. However, depending on the natural posture of the singer, this could also induce the swayback posture shown in Figure 4.1.

FIGURE 4.1. Postural Alignment for Breathing. Recommended by Estelle Liebling.[32] Reproduced with permission of Alfred Publishing, LLC.

[32] Liebling, *The Estelle Liebling Vocal Course for Tenor*, 9.

Regarding inhalation, both authors dedicate space to describe the shape, location, and function of the diaphragm. Liebling opts for a less detailed description of the process than Miller; she simply describes the steps of inhalation as automatic once the abdomen distends a bit due to the contraction of the diaphragm. Although Liebling gives far less detail than Miller on the topic, this is the part of the breathing process about which she offers the most detail. Miller provides a more detailed explanation of inhalation, providing more steps, including raising the ribs by contraction of the external intercostal muscles and opposition to the diaphragmatic contraction.

To describe exhalation, Liebling uses the word "support." Miller never says support and instead uses the term "*appoggio*." Even though she does not use the term, Liebling's description of exhalation sounds like an *appoggio* method. Liebling suggests never letting the chest sink down and repeats several times "SUPPORT THE TONE."[33] Again, Miller provides an extremely detailed version. Miller describes *la lutte vocale*, the vocal contest, where the gesture of inspiration is extended to resist the gesture of expiration. When efficiently coordinated between the breath cycle and phonation, Miller states that the singer barely realizes that the breath is being renewed because they remain in the gesture of inhalation above the vocal folds.

Both Miller and Liebling allude to *other* schools of thought on breath technique, but Miller is more direct in saying that lower abdominal distention is not a viable breath management option. Miller notes that "pouting out the lower abdomen locally, hypogastric, has nothing to do with the breath cycle but is just pushing out the viscera."[34]

The breath exercises recommended by each author focus on ultimately extending the duration of exhalation but each does so in an opposing way. Liebling recommends repeated exercises of long phrases, both spoken and sung, including speaking the alphabet as many times

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[33] Liebling, *The Estelle Liebling Vocal Course for Tenor*, 9.
[34] Miller, *Training Tenor Voices*, 25.

as possible on one breath. In a footnote, Liebling states that her course teaches the "controlled, inward pressure of the movable ribs and abdomen,"[35] although her singular breath control exercise and description of the exhalation process offer no more detail on how to accomplish or coordinate the inward pressure.

Registration

The order in which topics appear in these books offers insight into the level of importance each author bestows upon them. According to Miller, registration skills are for the advanced singer and advises teachers to establish skillful breath management, phonetic articulation, and balanced resonance before addressing registration. By contrast, Liebling addresses registration in the first exercises of her soprano course.

Both Liebling and Miller describe a three-register system for the voice, comprising a lower register, middle register, and high register. Both authors refer to the low register as "chest" and the middle register as "middle." Their descriptions of these two registers remain similar among all the *Fächer* they discuss. The differences lie in their descriptions and naming of the high register. Liebling calls the high register "head voice" in all voices, but mentions that this register is not a usable performance register for males. Liebling does not offer an alternative to this unusable register, essentially equating it with falsetto. Miller describes the high range as "head voice" in all singers, specifying "*voce piena in testa"* (full voice in head) for males as a register different from *falsetto* and the female head voice. Differences in the timbre of the registers are delineated largely along gender lines, with each author offering gender specific suggestions for singing in these registers; these are discussed in the following chapters.

One important difference between Miller and Liebling's descriptions of registration is whether transitioning between registers is a conscious or unconscious process. Liebling defines

[35] Liebling, *The Estelle Liebling Vocal Course for Tenor*, 10.

registers as tones produced "under several different automatic adjustments."[36] The use of the term automatic is likely the reason that Liebling spends just one page describing the registers and gives very generic instructions for singing through the pitch range. Miller provides a significant amount of information regarding how to transition between these registers, suggesting that he believes in a conscious process.

The method for blending these register transitions into one balanced range is a highly argued topic. Liebling's characteristic nonchalance is apparent in her instructions for blending the register transitions with the simple edict to "sing more GENTLY… when singing UPWARD" and "Sing more FIRMLY…when singing DOWNWARD."[37] However, Liebling does not specify what aspect of the voice one needs to adjust in this process – volume, breath speed, a laryngeal adjustment, or some other aspect. Essentially, the singer is expected to think more firmly or gently and the voice will adjust automatically. In extreme ranges, Liebling recommends modifying the vowel to an "AW"[38] or "O" and thinking the written vowel, another process that she claims would result in automatic positive results.

Miller is clear in his statement that strengthening both registers separately for the purpose of later reuniting them, what he calls register violation, is "potentially damaging."[39] Rather, Miller describes register transitions as a graduated adjustment between cricothyroid and thyroarytenoid muscular activity as well as resonator responses to these muscular actions. The technique Miller prefers for registration transition is *aggiustamento* (adjustment), also known as vowel modification. Miller suggests a modification to the neighboring vowel, only one step toward neutralization, rather than adoption of a fully neutral position as Liebling suggests. In this

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[36] Liebling, *The Estelle Liebling Vocal Course for Tenor*, 13.

[37] Estelle Liebling, *The Estelle Liebling Vocal Course for Soprano: Coloratura, Lyric, and Dramatic Soprano* (New York: Chappell, 1956), 44.

[38] I assume that by "AW," Liebling was referring to the [ɔ] sound.

[39] Richard Miller, *Training Soprano Voices* (Oxford: Oxford University Press, 2000), 26.

process, [i] would transition to [I], [e] would transition to [ɛ], etc. Figure 4.2 shows Richard Miller's Vowel Modification (*Aggiustamento)* Chart. As the singer ascends in pitch, they choose the neighboring vowel (the direction depends on voice type, discussed in Chapters V and VI). As the singer descends in pitch from the *secondo passaggio* back into the middle range, they will transition back to the original vowel. At all times, the singer should only adjust one position away from the written vowel in order to retain clear diction.

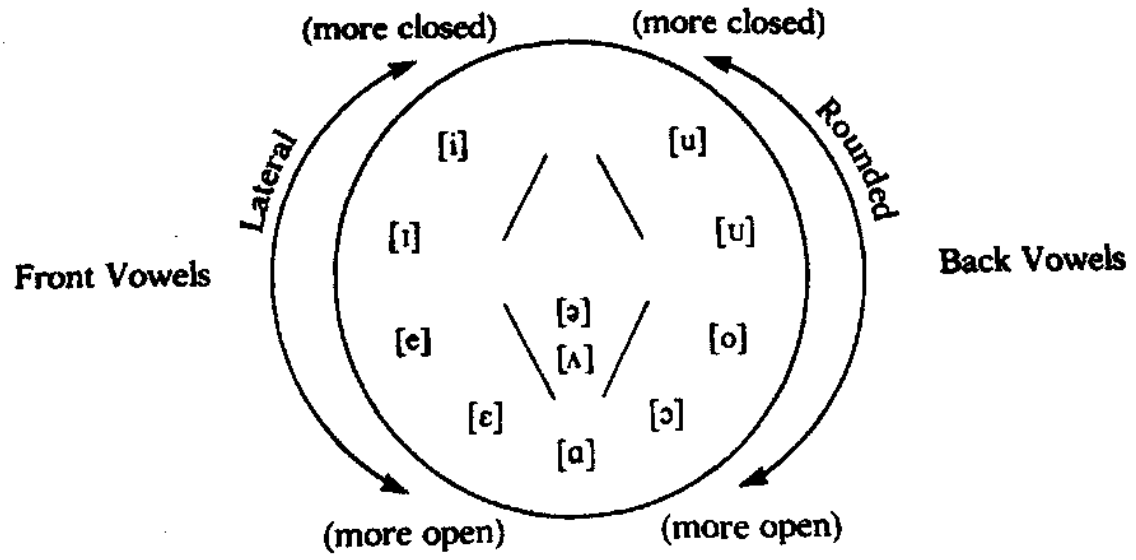

FIGURE 4.2. Vowel Modification Chart. Recommended for sopranos by Richard Miller in *Training Soprano Voices*.[40] Reproduced with permission of Oxford Publishing Limited through PLSclear.

Resonance

Resonance is defined as the propagation of a sound by reflection upon a surface. In speech and singing, this is further described as "the acoustical effects that the vocal tract exerts on sounds that propagate through it."[41] Resonance is measured quantitatively through spectrographic analysis and qualitatively through perception of tone quality. The characteristics

[40] Miller, *Training Soprano Voices*, 125.

[41] Brad Rackerd, Eric J. Hunter, and Peter Lapine, Resonance Effects and the Vocalization of Speech. *Perspectives of the ASHA Special Interest Groups* 4(6), 1637–1643.

of a resonant tone in western classical singing include a balance of *chiaroscuro* ("light and dark") timbre, what Miller calls the "*voce completa,*" or complete voice. Miller utilizes spectrographic analysis to quantify this timbre, describing it as a sound that "distributes acoustic energy within appropriate regions of the spectrum… with little or no acoustic activity between the partials."[42] The appropriate regions of the spectrum he refers to are whole integer multiples of the fundamental frequency. For example, if the fundamental pitch (the pitch that is sung) is 440 Hz (A4), the first fundamental would be the fundamental pitch times two, 880 Hz. Spectrographic analysis tools were not in public use during Estelle Liebling's active teaching career and therefore her technique does not make mention of any visual tools for resonance training, nor does it utilize spectrographs to describe resonance.[43] Miller's use of spectrographic analysis is retrospective, his exercises do not list spectrographic programs such as Voce Vista as a necessary tool in real-time resonance training.

One highly argued aspect of resonance is related to the idea of placement. To understand the concept of placement, one must first understand the difference between resonating chambers and sensations of sympathetic resonance. A resonating chamber is a cavity that amplifies the sound waves that propagate through it. The resonating chambers of the human voice are the mouth, pharynx, larynx, nasal cavities, piriform and ventricular sinuses, facial sinuses, subglottal trachea, and chest (although the inclusion of the latter three in this list are a topic of current debate in vocology).

Impostazione della voce (placement of the voice) is described by Miller as a type of resonator coupling that avoids localized placement in the mouth or pharynx but instead balances

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[42] Miller, *Training Soprano Voices*, 69.

[43] Spectrographic analysis was invented in the early 1940s for use by the United States Military as a way to send and decode encrypted voice messages. It was not until Donald Miller created the Voce Vista program in the 1990s that spectrographic analysis became a popular tool among voice scientists.

the feelings of resonance between these. Miller references the historic Italian School of Singing in his description of *impostazione* as a type of *appoggio* where the breath and resonance are balanced and cooperate to produce the tone. Central to this topic is the discussion of sensations in the vocal tract. Physical sensations of resonance are a result of sympathetic resonance, or the vibratory sensation felt in the body as a result of the true vibrations in the resonating chambers. Many singers describe feelings in the "mask" or frontal sinuses, in the chest, behind the eyes, or in the throat. The places where a singer may feel sympathetic vibration vary by individual, although those listed are common. Despite the term *impostazione* meaning "placement," Miller is strongly against techniques that utilize placement of tone as a physical goal. Miller's reasoning relates to the potential disconnect in understanding between the teacher's description and the student's experience, as well as the potential for creating imbalanced resonance by means of strengthening one "place" at the expense of others. This is a common opinion in the pedagogical community. In her dissertation on mezzo-soprano voice training, Sandra Cotton notes:

> Attention to output can and does aid many singers in finding more efficient resonance, however the different manners in which we sense this acoustical feedback make it difficult to establish a productive dialogue within the pedagogical community.[44]

Despite this opinion, descriptions of placement as a resonance tool have a record of success. Estelle Liebling bases most of her discussion of resonance on the sensation of vibration in the mask or chest. When working with younger or less experienced singers, many teachers focus on descriptions of sensation to build a common understanding of the kinesthetic aspects of singing. Prior to the advent of voice science tools like the spectrograph, sensation was one of the primary teaching methods. However, this approach is largely empirical. Reference to sensation may be most effective when teaching within one's own gender, because of the similarity of the pitch range and general size of the larynx.

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[44] Cotton, "Fach vs. Voice Type," 10.

The overall size and shape of the resonating chambers primarily influences timbre and contributes to the perception of *Fach* discussed earlier. By adjusting the shape of the vocal tract, each singer is capable of timbre adjustments that can increase or decrease the resonance of the sound. The adjustment of the vocal tract configurations also impacts intelligibility of diction. According to Miller, topics of resonance and articulation are inseparable for the reason that articulation controls resonance. Each vowel has an acoustic spectrum of first and second formants that differentiates its sound from other vowels, regardless of spoken or sung pitch that is superimposed. Vowel tracking is the adjustment of the articulators and resonance cavities to accommodate the chosen vowel, thereby boosting the correct formants that result in intelligible pronunciation of the vowel. A more straight-forward way to describe vowel tracking would simply be the clear enunciation of vowels. Despite the simplicity of the concept, the practice of vowel tracking requires further explanation. In the speech range, the fundamental frequencies lie closer to the intrinsic frequencies of the vowel formants, thus requiring little adjustment of the articulators.[45] As pitch strays further from the speech range, more adjustment is required to retain intelligibility of the vowel while accommodating the vocal needs of the sung pitch. Miller's suggestions for vowel tracking largely reiterate his steps for *aggiustamento*.

The "three R's" mentioned in this section – respiration, registration, and resonance – are standard topics for all singing guides. Miller and Liebling hold many of the same opinions in theory, but in practice, their techniques can be viewed as opposite. Both Miller and Liebling's definitions of good breathing are based on physiologic principles, but their exercises focus on opposite priorities. Regarding registration, both authors describe a three-register system, but their

[45] A vowel formant is a cluster of acoustic energy around a particular frequency that gives each vowel its characteristic sound. Each vowel is distinguished by two formants, F1 which is influenced by height of the tongue and F2 which is influenced by the shape of the lips. For a comprehensive explanation of vowel formants, see Kenneth Bozeman's *Practical Vocal Acoustics*.

training of *passaggi* points feature opposing suggestions. Both authors believe in balanced resonance and ascribe to a vowel modification method, but again, their differences show in the type and extent of vowel modification.

CHAPTER V

FEMALE VOICE TYPES

Soprano Voices

The soprano voice type has the highest range of the four main voice types and is often distinguished from its sister type, the mezzo-soprano, by vocal color and tessitura. Throughout the history of Western classical music, the soprano voice has always been the predominant female voice type for casting in operas, and until the mid-18th century, when the term "mezzo-soprano" first appeared, was the only term used to describe female voice types. Of course, the soprano is still the most common of all voice types, but within this type there are numerous varieties. From the lyric coloratura and soubrette on the high and light end of the spectrum to the dramatic soprano on the dark and full end, there is more contrast within the soprano type than any other voice type. The diversity of soprano instruments necessitates a diversity of approaches for training. Here, this document examines the suggestions of Richard Miller and Estelle Liebling regarding the training of soprano voices on the topics of respiration, registration, and resonance.

Respiration

One area of difference between genders mentioned by Miller is the difference in the anatomy of the male and female torso. Miller notes that there is generally only a little space between the tenth rib and hipbone in the female anatomy. He elaborates that tenors and some baritones often have twice as much space between the bottom of the ribcage and the hipbone than their female counterparts. However, Miller also states that bass-baritones and basses with long torsos generally have less room between the ribcage and hipbone. Whether or not these

generalizations are accurate, Miller stresses the importance for teachers of singing, "especially men who teach women and women who teach men, to be aware of these structural differences."[46] Liebling makes no mention of breath considerations based on gendered anatomy. In fact, the breathing sections of Liebling's course books are all identical; the postural alignment figure included in Liebling's section on breathing is a male body in the soprano and mezzo-soprano books.[47] This figure depicts the importance of proper alignment along the frontal plane (front to back) but does not discuss the importance of expansion along the sagittal plane (side to side) or the difference in gendered anatomy of the rib and pelvic area.

In *Training Soprano Voices,* Miller talks about breath as "breath energy" and defines it as the result of *appoggio* coordination. Among many other descriptions in his various books, Miller states that *appoggio* singing technique "avoids the rapid collapse experienced in customary breathing or in normal speech by retaining the inspiratory posture of the sternum and the ribcage for longer durations, thereby retarding diaphragmatic ascent."[48] Nevertheless, the *appoggio* is not only related to the exhalation, but to the coordination of the exhalation with phonation and resonance. In describing the relationship between air and phonation, *la lutte vocale* (the vocal contest), Miller states that "the vocal folds ought to offer neither more nor less resistance to subglottic pressure than is appropriate to the phonatory task at hand."[49]

Miller's soprano exercises are focused on what he calls the "onset-release-breath-renewal maneuver." These exercises are targeted toward the clean onset of tone to encourage flexibility of the voice, with slight articulatory motion in the umbilical-abdominal area for agility, laryngeal freedom, and precise prephonatory tuning. Miller provides numerous examples of *bel canto*

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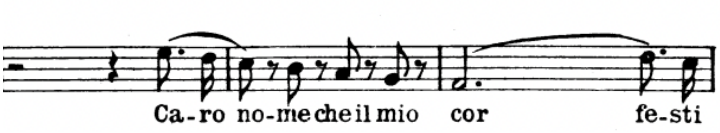
[46] Miller, *Training Soprano Voices*, 43.
[47] See Figure 4.1
[48] Miller, 35.
[49] Miller, 35.

("beautiful singing")[50] repertoire that require repeated onsets with alternating breath renewal. One such exercise is the introduction to "Caro nome" from *Rigoletto*.

EXAMPLE 5.1. "Caro nome" from Giuseppe Verdi's *Rigoletto*.



Liebling lists only one type of exercise as breath specific. In this exercise, she instructs the singer to take a "SHORT" breath and sing five repeated tones in "ONE BREATH."[51] She then suggests repeating the exercise with seven notes, then nine, then eleven notes, gradually increasing the number of notes that can be sustained on one short breath. Liebling uses this exercise as a trick to teach the student that "it is not necessary to take a 'lot of breath,' but rather to take what you NEED and use it properly."[52] While this exercise may have a psychological purpose, the technical hazards of stiffening or locking the abdominal muscles in order to stack extra notes onto the exercise may outweigh any psychological benefits. Miller would disagree with the usefulness of this exercise, stating "breath management is not improved… by sustaining isolated long notes and phrases."[53]

The rest of the exercises Liebling includes are all agility based; they are nearly all scalar and legato. One exercise, listed as a pianissimo study, includes mid-measure rests, similar to the Miller breath-renewal exercises, but breath renewal is not their stated purpose. Ultimately, the way that Miller and Liebling address agility and sostenuto for the soprano are opposite. Miller focuses on short interval singing with quick successive onsets to promote flexibility that will aid

[50] *Bel Canto* describes a type of singing technique utilized in the late 18th century. For more information, see Glossary.

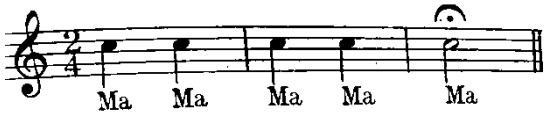
[51] Liebling, *The Estelle Liebling Vocal Course for Soprano*, 29.

[52] Liebling, 29.

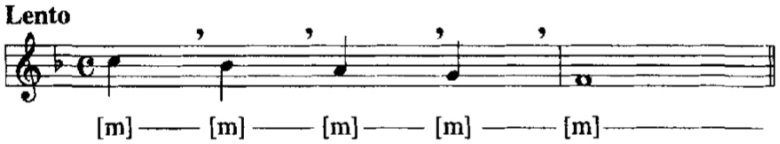
[53] Miller, *Training Soprano Voices*, 41.

in agility and ultimately into *sostenuto* (sustained singing). Liebling focuses on long interval singing with single onset sustained notes and applies this technique to legato agility passages.

EXAMPLE 5.2. Legato Breathing Exercise. Recommended by Estelle Liebling to develop a sustained legato line.[54] Reproduced with permission of Alfred Publishing, LLC.



EXAMPLE 5.3. Beginning Breath Renewal Exercise.[55] Recommended by Richard Miller to develop the onset-breath-renewal maneuver. Reproduced with permission of Oxford Publishing Limited through PLSclear.



The size of the voice should be considered when determining which method to favor. An argument could be made for favoring the method that focuses first on building up the students' weaknesses. Voices of a larger size may carry too much weight or struggle with intonation using Liebling's exercises but could use Miller's exercises to build flexibility and pitch accuracy which could more easily be transferred into the sustained repertoire that is characteristic of their *Fach*. Conversely, a lighter voice may struggle to find their full breath energy beginning with Miller's short phrases and would benefit from working on sustained and legato phrases that they could apply to the agile repertoire that is characteristic to their *Fach*. Perhaps the best method is one that alternates these methods to challenge the singer to even more abdominal and laryngeal flexibility.

[54] Liebling, *The Estelle Liebling Vocal Course for Soprano*, 29.
[55] Miller, *Training Soprano Voices*, 44.

Registration

Liebling ascribes to a three-register system for sopranos, which she calls chest, medium, and head. She instructs that "there must be NO 'break' or difference of tone quality between the registers."[56] This instruction could be confusing for a beginning singer using this book as a replacement for a live teacher, because the primary factor that distinguishes registers to the listener is tone quality, and for many singers, the sensations for each register are different. When describing how to approach descending exercises, Liebling exhibits a gendered opinion regarding the typical difficulties. For male singers she provides a generalized vocal flaw: "Male singers sometimes have an inclination to want to sound 'big' and virile and consequently they may try to 'push' the tone up from below… THINK the tone as coming down on the pitch FROM ABOVE."[57] For sopranos, Liebling offers no such warning; she simply instructs, "MENTALLY be in the position of the HIGH note before you begin each passage."[58] Liebling does not mention any common issues of high female voices. Perhaps this is a statement on the amount of difference she notices when teaching outside of her gender.

The exercises Liebling provides for soprano are mostly scalar or triadic versions of the same exercise and follow an ascending-descending contour. Liebling suggests beginning these exercises around Middle C and working upwards through the *primo passaggio* and *secondo passaggio*. These standard exercises may be helpful in bridging the registers for some singers, but there is not sufficient variety of contour and rhythm to be effective for all students.

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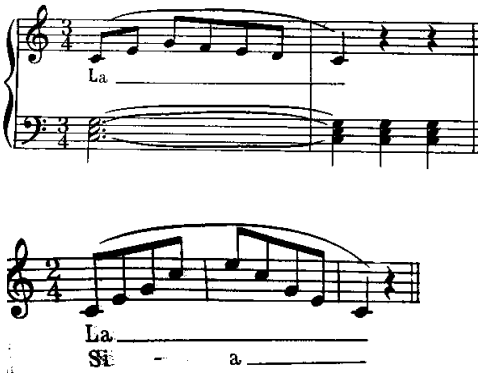
[56] Liebling, *The Estelle Liebling Vocal Course for Soprano*, 44.
[57] Liebling, *The Estelle Liebling Vocal Course for Tenor*, 20.
[58] Liebling, *The Estelle Liebling Vocal Course for Soprano*, 20.

EXAMPLE 5.4. Exercises to Bridge the Registers. Recommended by Estelle Liebling for sopranos to bridge the registers.[59] Reproduced with permission from Alfred Publishing, LLC.



Miller also subscribes to a three-register system for sopranos, describing four separate timbres for the soprano voice including head, head-chest mixture, chest-head mixture, and chest. One registration factor that distinguishes the soprano voice is its long middle range.

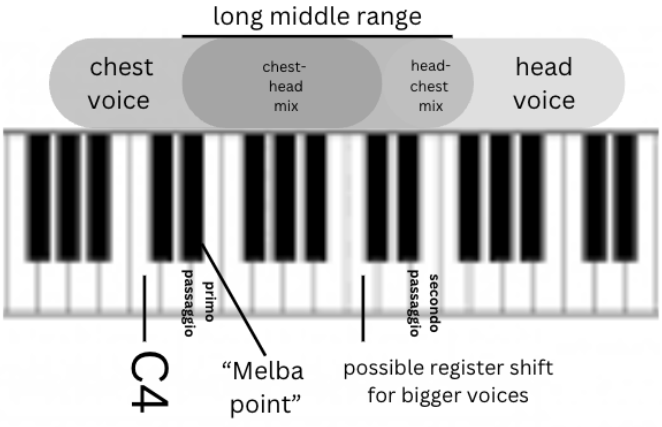


FIGURE 5.5. The long middle register (*voce misto*) of the soprano voice. Utilizes Richard Miller's mixed timbre locations. Source: Richard Miller's *Training Soprano Voices*.

Miller provides clear pitch locations for the borders of each of the four timbres he lists. Chest voice should not rise above Eb4, described as the "Melba Point" because of Dame Nellie Melba's insistence that this was the upper limit for full chest timbre. For chest-head mixture,

[59] Liebling, *The Estelle Liebling Vocal Course for Soprano*, 21.

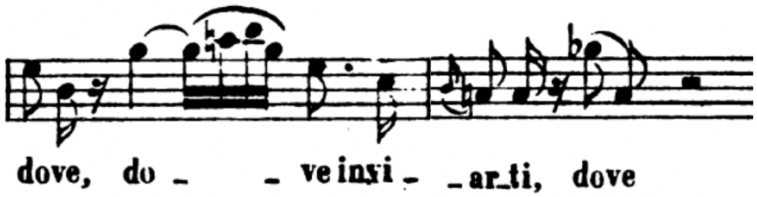
Miller implies that Eb4 to C#5 is the appropriate lower middle range. From C#5 to F#5, the upper middle range, head-chest mixture is appropriate, and from G5 to C#6 is a full head voice register. Miller also lists D6 to A6 as the *Flageolet* register, but I will not be visiting this register as it is a specialized range that is not used by all sopranos. Miller describes the transition of chest-head to head-chest mixture as a "constantly flexible dance between the [cricothyroid and thyroarytenoid muscular balance.]"[60]

In accomplishing register transitions, Miller suggests awareness of *appoggio della nucca* (support of the neck), essentially describing a balance of the head and neck that avoids choreographing pitch change by motion of the chin or larynx. Miller also recommends an increase in *appoggio* action, both breath energy and *appoggio della nucca*, at the *passaggio* points. As described throughout Miller's breath chapter, the breath *appoggio* depends on an expansion of the anterior-lateral-dorsal region of the torso, not inward abdominal thrusting.

Miller suggests multiple exercises from the literature to practice this transition. The excerpts provided all leap up from the upper middle range into the range of the head voice register and move downward through the *secondo passaggio* back into the middle range on short note values. Example 5.6, an excerpt of the recitativo "Ardo, una vampa…" preceding the aria "Oh quante volte!" from Vincenzo Bellini's *I Capuleti e i Montecchi,* is a prime example of Miller's registration blending strategies, combining leaps above the *secondo passaggio*, fast note values on the descent through the *secondo passaggio* point, and intermittent rests to allow for the onset-breath-renewal maneuver.

[60] Miller, *Training Soprano Voices*, 27.

EXAMPLE 5.6. "Ardo, una vampa…" from Bellini's *I Capuleti e i Montecchi*.



Another critical aspect of appropriate register transition between the middle and upper soprano registers is *aggiustamento*. For sopranos, Miller suggests modifying the vowel to a more open neighbor vowel above the *secondo passaggio* and to a more closed vowel on descending pitches. Liebling's suggestions for vowel modification for sopranos agree with the modification toward an open vowel in the high range, but are less detailed in vowel choice than Miller, recommending "AW" as the vowel of choice regardless of the written vowel.

Resonance

In *Training Soprano Voices,* Miller insists that teaching resonance is only possible with specific scientific language and modeling of sound, because "some females have little awareness of change in vibratory sensation when moving from one part of the range to the other."[61] He concedes that strong sympathetic vibration can be felt in the chest in the low range and in the head in the high range but describes the upper middle range sensation as moving "upward" without specifying a location. Miller's primary reason for advocating specificity of language is the belief that physiologically imprecise language could confuse singers into misunderstanding the source of the sensation with the source of the sound. On this topic, it seems that Miller stands on principle, as he does not elaborate what effect this confusion would have on overall output. Nevertheless, many teachers, including Liebling, have successfully used descriptions of sensation to build kinesthetic awareness in students. Liebling describes sensations in the chest

[61] Miller, *Training Soprano Voices*, 83.

and face as a primary indicator of good technique, noting that these sensations are secondary and not the actual location of production, while trusting the singer to compartmentalize these facts.

For both authors, vowel modification is an important aspect of balancing resonance throughout the range, even though their methods to achieve this balanced resonance differ. Liebling suggests that, by maintaining a low jaw and a rounded "AW" position, the singer can maintain a consistent resonance. Miller directly contradicts this, listing "maintaining a low jaw position" and "trumpeting the lips into 'aw' position" as erroneous techniques that "disregard normal phonetic responses to the shifting acoustic demands of ascending and descending pitch and of diverse dynamic levels."[62] Despite this insistence, Miller does not specify what effect these methods mentioned above would have on sound or ease of production.

Mezzo-Soprano and Contralto Voices

The mezzo-soprano is a relatively new voice classification. Much of the Baroque and Classical mezzo-soprano repertoire was once listed as soprano. The term mezzo-soprano has appeared in print since Faustina Bordoni received the title from Quantz in the mid-18th century.[63] However, the term did not come into regular use until the 19th century, as soprano roles extended to higher ranges, essentially forcing the lower-voiced sopranos into this new voice type. The music itself remains the same, but the separation criteria between sopranos and mezzo-sopranos has increased. What was once a consideration based primarily on range now encompasses many different factors, including vocal color, registration, tessitura, and passaggio.

Modern systems often opt for four- or six-part classification criteria; four-part is the common SATB spacing seen in choral music, whereas six-part is the soprano, mezzo-soprano,

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[62] Miller, *Training Soprano Voices*, 83.

[63] Owen Jander et. al, "Mezzo Soprano," *Grove Music Online*, 2001; accessed 13 October 2023, *https://doi.org/10.1093/gmo/9781561592630.article.O903230*.

contralto, tenor, baritone, and bass categories seen more often in classical solo singing. The system of four-part voicing in the early 18th century was soprano, castrato, tenor, bass.

Among his catalog of voice-type specific books, Miller does not publish anything specific to the mezzo-soprano, but rather includes short mentions of the mezzo-soprano in *Training Soprano Voices* and *National Schools of Singing*. Miller's choice to use a single-type female voice model seems anachronistic in relation to his modern, scientific approach. The lack of resources from Miller regarding mezzo-soprano voices reinforces the prevailing sentiments that mezzo-sopranos are less important or desirable than sopranos. In her dissertation about transitioning from the soprano to mezzo-soprano *Fach,* Caitlin Moore describes the psychological toll that transitioning to the lower *Fach* can cause, based on a pervasive culture of elitism and micro-aggressions against low female voices.[64]

Respiration

Estelle Liebling's respiration section for mezzo-soprano is identical to the sections in all her books for other voice types. As with the soprano book, Liebling utilizes the same figure of a male body to describe posture for breathing. Liebling also recommends the same exercises, suggesting that Liebling ascribes to a one-size-fits-all breathing model.

Richard Miller postulates that "details vary in the teaching of sopranos and mezzo-sopranos, but principles of technique remain the same;"[65] nevertheless, he does not provide any clear information about which details vary and in what way. Despite his authorship of almost 600 pages of information on technique for sopranos, tenors, and baritone and bass-baritones, Miller devotes less than ten pages to the discussion of mezzo-soprano technique. His discussion consists of a comparative analysis of mezzo-soprano techniques among the National Schools of Singing,

[64] Caitlin Hammon Moore, "Considerations and Pedagogical Approaches for Transitioning from Soprano to Mezzo-Soprano" (D.A. Diss., University of Northern Colorado, 2023), 3.

[65] Miller, *Solutions for Singers*, 217.

but does not explicitly comprise a technique supported by Miller. Miller makes no mention of breath management for mezzo-sopranos in any of his writings, but some assumptions can be made based on his instructions for other voice types and his criticisms of breath management in some of the national schools.

There are two options for comparison: overlay Miller's comparative strategies for tenor and baritone onto soprano and mezzo-soprano, or lump mezzo-soprano into the soprano *Fach* and utilize the soprano strategies. Even though vocal demands of the repertoire for mezzo-soprano are more similar to those of the baritone, anatomically and physiologically, the mezzo-soprano more closely resembles the soprano. Because of these considerations, I believe that use of a hybrid of the methods described below may be most advantageous.

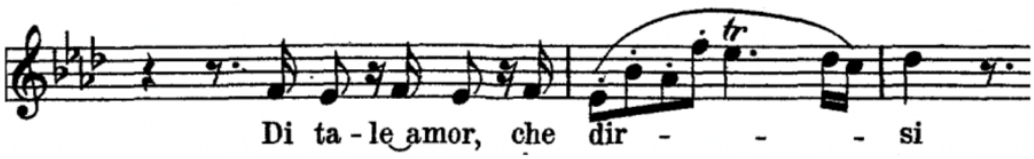
Breath demands for high- and low-voiced males relate primarily to the comparative size of their larynges and the range and sostenuto demands of their repertoire. According to Miller, laryngeal size is an important contributing factor to vocal *Fach,* with larger larynges typically corresponding to lower voice types. Because of the larger larynx of the mezzo-soprano, and presumable larger vocal folds that accompany it, more breath energy is required in the upper range to counteract the glottal closure of these larger vocal folds. The need for increased breath energy in the upper range is paralleled in the tenor and baritone voices. Repertoire demands also influence the types of techniques needed for a particular voice type. The repertoire demands placed on mezzo-sopranos are more similar to those placed on baritones than on tenors or bass-baritones. Mezzo-soprano literature typically consists of mid-range tessitura with occasional ascents above the *secondo passaggio*, in contrast to tenors, who sing much of their repertoire in the upper-middle and upper range, and bass-baritones and basses, who do much of their singing in the lower-middle and low range. This mid-range singing with occasional high notes requires a flexible breath mechanism that can increase energy on ascent but does not need the sustained

breath energy required for tenors. Miller compares the energy levels required for female singers to that used in the male falsetto voice.

A compelling argument for considering the mezzo-soprano within the soprano *Fach* is that, according to Miller, "the Italian mezzo-soprano closely resembles the dramatic soprano."[66] Because his techniques for soprano closely resemble those he describes as the Italian School, one can assume that his techniques for mezzo-soprano also lie within this school. In fact, Miller lists several breath techniques of other national schools that he considers erroneous, including high-torso breathing and upper-back spreading that he associates with the English and German National Schools, respectively. These contrast with the *appoggio* technique that he advocates in his writing.

Miller's exercises for bigger-voiced sopranos are a good option for breath management exercises for the mezzo-soprano. These include utilizing passages from the literature that promote the onset-breath-renewal maneuver within a middle-range tessitura. The cabaletta of Leonora's aria, "Tacea la notte placida/Di tale amor," in Verdi's *Il Trovatore* is noted specifically for its combination of repeated onsets, agility, and leaps above the *secondo passaggio* with scalar descending motion. This example is ideal for larger-voiced soprano and mezzo-sopranos because it has a medium-low tessitura and emphasizes precise and light onsets at the *primo passaggio* and *secondo passaggio*. A larger voiced mezzo-soprano or contralto could use Example 5.7, in a lower key, to align with their individual *passaggio* point.

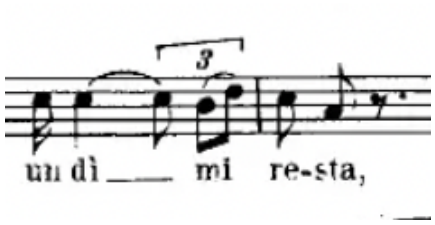
EXAMPLE 5.7. "Di tale amor," from Giuseppe Verdi's *Il Trovatore*.



[66] Miller, *National Schools of Singing*, 151.

Verdi's music is full of opportunities to practice Miller's breathing exercises. A similar example from the mezzo-soprano repertoire would include excerpts of "O Don Fatale" from *Don Carlo*. The short phrase shown in Example 5.8 can be transposed through numerous keys to blend the *passaggi* while using the onset-breath-renewal maneuver.

EXAMPLE 5.8. "O Don Fatale" from Giuseppe Verdi's *Don Carlo*.



Registration

Liebling's registration instructions for mezzo-sopranos are identical to those offered for sopranos except for the use of a lower starting pitch in the exercises. Although Liebling published many soprano-specific books of cadenzas and repertoire, her training for the mezzo-soprano registers implies a belief in the singular female *Fach* of earlier pedagogues. Even though Liebling includes information about the passaggio pitches of mezzo-sopranos, she suggests the same technique for navigating it: singing GENTLY upward and more FIRMLY downward.

As with other topics, Miller mentions nothing specific about the mezzo-soprano regarding registration. The reader is once again left to speculate whether Miller aligns mezzo-soprano technique with sopranos or with low-voiced males. Unlike the transfer of breathing exercises from baritones to mezzo-sopranos, comparing their registration is inappropriate. While baritones display very little timbre and technique change near the *primo passaggio*, mezzo-sopranos more closely reflect the *primo passaggio* function of the soprano. The *secondo passaggio* of the tenor requires a greatly increased level of breath energy and pharyngeal

adjustment, which more closely resembles techniques utilized by mezzo-soprano belters than classical-style mezzo-sopranos.

The classically trained mezzo-soprano, like the soprano, utilizes mixed timbres throughout her middle range to unite the registers and blend the *passaggi*. While Miller characterizes the soprano as having a long middle register, the mezzo-soprano has a higher *primo passaggio,* resulting in a longer chest register than the soprano, and therefore, a shorter middle register. The mezzo-soprano *primo passaggio* is located around E4–F4 and the contralto's is around G4–Ab4. Because of this higher *primo passaggio,* the mezzo-soprano can carry chest voice timbre higher into her range. Miller, however, compliments the Italian mezzo-soprano method of gradual chest-head mixture that avoids thickening of the entire scale "to the detriment of the upper range."[67]

On topics of registration, Miller clearly prefers the Italian method. In an account of what *not* to do, Miller describes a German habit of overly wide pharyngeal distention and an exaggerated vertical buccal-pharyngeal posture that results in an artificially darkened timbre. Similarly, he describes the English technique as "mandibular," with an emphasis on the "sagging British jaw" and "avoidance of frontal timbre."[68] In both techniques, the head voice is primary in the entire range, which leads to a what Miller describes as a "hootiness" in low notes and weakness in the higher range. Miller gives this type of singer the slanderous nickname of "mooing mezzos."[69] Of French mezzo-sopranos, Miller describes an ambiguous application of the *Fach* title, including sopranos with limited range capabilities and lower tessituras. Because of this use of the term as a catch-all for singers in a lower range, the French mezzo-soprano timbre has more variation and is often more suited to lyric roles than dramatic.

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[67] Miller, *National Schools of Singing*, 149.
[68] Miller, 152.
[69] Miller, *On the Art of Singing*, 36.

Miller notes the variety of timbre, from light to dramatic, within soprano and mezzo-soprano voice types. With regard to vowel modification, vocal weight can be the determining factor for when and how to modify. The lyric mezzo-soprano can follow Miller's guidelines for the Soubrette soprano, and the dramatic mezzo-soprano could follow those of the dramatic soprano. When the timbre changes are a result of appropriate *aggiustamento* based on vocal weight, the vocal color of the mezzo-soprano emerges as a natural result of the technique.

Resonance

With regard to resonance for the mezzo-soprano, Liebling provides no different or additional suggestions from her other courses and Miller provides nothing. It is likely most advantageous to use a combined strategy drawing on Miller's suggestions for sopranos and low-voiced males. As mezzo-sopranos approach their high range, it is acoustically advantageous for them to adopt a dropped jaw and more open vowel position like the soprano. However, with lower voices, the tendency for unhelpful tongue manipulation and laryngeal depression are increased, as Miller addresses in *Securing Baritone, Bass-Baritone, and Bass Voices;* discussed in the section on baritone resonance. The mezzo-soprano could utilize the tongue fronting vowels of [i] and [e] and consonants [n], [b], and [m] to encourage a released tongue and more forward sensation of resonance.

CHAPTER VI

MALE VOICE TYPES

Tenor Voices

Tenors are the rarest voice types, yet one of the most sought after for their importance to the operatic repertoire. The primary factor that distinguishes the tenor from lower male voice types is his bright timbre and high range. Like the soprano, the tenor *Fach* is extremely diverse, comprising many types from lyric to dramatic. The *leggiero* or "light" tenor is the lightest tenor of operatic proportions, with a tone that Miller describes as full of *morbidezza* ("sweetness") and control over a variety of dynamics and colors. The *spinto* tenor (from the Italian word meaning "push") displays a more powerful and bright instrument than his lighter tenor brothers. The most dramatic tenor voice is the *Heldentenor*. The *Heldentenor* is primarily suited to singing Wagner opera because he carries a similar timbre to the baritone, the range of a tenor, and an unusual amount of dynamic power. Other types of tenor lie between those listed above, including those that specialize in choral music, operetta, musical theatre, or comedy. Because of the diversity of *Fächer* within the tenor voice type, training for tenors is one of the most elusive tasks for many teachers.

Respiration

Miller's exercises begin with repeated *staccati* to promote a quick return to the inspiratory gesture and to remove opportunity for the ribs to collapse: what he calls "reflex breath-renewal syndrome."[70] Miller then suggests moving onto combination exercises of *staccati*

[70] Miller, *Solutions for Singers*, 5.

and sustained pitches to coordinate the onset and offset of the breath with the phonation, and the volume with the amount of air pressure. Miller recommends Farinelli exercises, named for the famous castrato, in which the singer steadily inhales for a number of counts, then exhales on a tone for a longer number of counts, gradually extending the duration of exhalation relative to inhalation. Unlike Liebling's description of controlled inward pressure, Miller recommends resisting the inward pressure of the ribs. Miller shares several popular *appoggio* axioms, including "singing on the gesture of inhalation," and stresses that *appoggio* is not only a breath idea but also relates to postural support through *appoggio della nucca* (lean/support of the neck), which is also important for resonance. Despite often mentioning the axiom *"si canta come si parla"* (one sings as one speaks), Miller would likely disagree with Liebling's alphabet exercise because he states that "natural breathing as employed for speech is not adequate to the tasks of cultivated singing."[71]

Registration

Upon initial reading, it is immediately apparent that Richard Miller and Estelle Liebling have very different opinions regarding the importance of register training and *passaggi* in the tenor voice. Miller begins discussing register events on the first page of the first chapter, dedicating the entire chapter to describing the location of *passaggi* for various types of tenors. This immediate and detailed introduction to registration implies that, for Miller, navigating the *zona di passaggio* is an extremely important topic for training the tenor voice.

In contrast, Estelle Liebling devotes little attention to describing registers, their locations, or differences in tenor voice types that may influence their locations. Liebling describes a three-register system that encompasses chest, medium, and head registers. To provide a visual description of the physiology of the vocal cords, Liebling uses the metaphor of piano strings

[71] Miller, *Solutions for Singers*, 18.

mentioned earlier. Liebling describes the glottis as fully opened but does not mention the level of muscular use for approximation of the glottal opening. In terms of proprioceptive awareness, Liebling suggests that the vocal vibrations are mainly felt in the chest. According to Liebling, "the transition between [chest and medium] registers is entirely automatic and the singer himself is completely unaware of it."[72] This may be true for some singers, but voice teachers need not fear for their job security if one is to judge from the perspective of Richard Miller in upcoming paragraphs. Liebling continues her piano metaphor, asserting that medium pitches correspond to medium length strings and, therefore, the vocal cords vibrate along a slightly shorter length. In the medium register, Liebling claims that vibratory perception is felt in the front of the face. Despite describing the chest and medium registers as "one long, unbroken line,"[73] Liebling offers the caveat that there is a point in the upper portion of the medium register where an adjustment takes place, and that the tone must be covered.

Liebling declares that the head register is "not a regular part of the male voice."[74] The sound she associates with the head register is a weak tone without much carrying power. In terms of physiology, she describes vocal cords vibrating along half their length with a larger closed portion near the anterior commissure, resulting in the glottal opening being slightly rear of center. This seems to be a loose description of a mutational chink that effects many young singers, causing a breathy, weak tone. Liebling states that this tone is also known as falsetto. In fact, Liebling is so adamant that falsetto is the same as head register that she asserts the following warning to the reader:

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[72] Liebling, *The Estelle Liebling Vocal Course for Tenor*, 13.
[73] Liebling, 13.
[74] Liebling, 13.

> It is possible, through practice, to so strengthen the upper head tones as to give them what might be called a 'false' tenor brilliance. Singers who do this are then under the mistaken impression that they have extended their range of high tones. But this is NOT true because such tones are risky and difficult to control and also, such tones can NEVER be blended downward into the medium register. An unpleasant BREAK will always occur in such instances.[75]

Liebling insists that head voice should be used only within the limits of the upper medium register, essentially suggesting that pitches above the *secondo passaggio* are off limits. In fact, the exercises she provides sit firmly in the typical *zona di passaggio* for tenor, from B3–F4. Despite claiming to believe in a three-register system, Liebling only provides adequate instruction for two registers. Liebling describes the technique as a "relaxing study" where the jaw, lips, and tongue are completely relaxed. Liebling also suggests maintaining "full breath support" while singing at a soft dynamic and placing the tone further back in the head to eliminate frontal resonance.

The suggested exercise, shown in Example 6.1, seems insufficient to train high notes, especially without any mention of onset or use of musculature. It is more likely that the singer will carry too much weight on an ascending line in the *passaggio* and that intonation may suffer from the effort of repeated onsets in the top of the range. Additionally, because Liebling suggests not using the "head register" in performance, her discussion of a three-register system is essentially theoretical. The technique she has espoused creates a two-register system, with only one register fit for performance.

Liebling's discussion of covering the tone may provide some insight into her strategy for utilizing Example 6.1. Aspiring tenors and teachers alike may find some comfort in her assertion that "covering the tone is a simple matter."[76] The steps she describes for covering a tone are (1) using the "AW" mouth position regardless of the original vowel, (2) mentally aiming the tone

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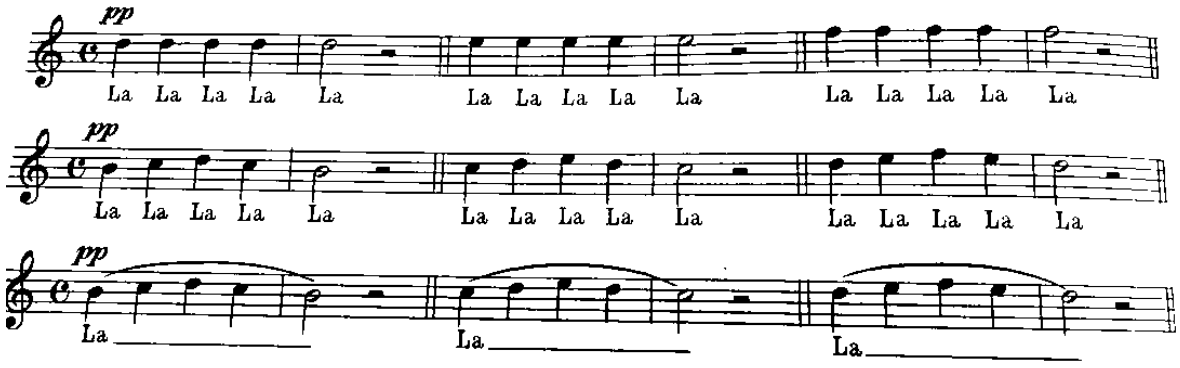
[75] Liebling, *The Estelle Liebling Vocal Course for Tenor*, 44.
[76] Liebling, 23.

forward through the bridge of the nose, (3) keeping the eyes looking straight ahead in a normal manner, without raising eyebrows or head, (4) thinking of coming down to the pitch from above, and (5) maintaining full breath support. Liebling suggests tenors only begin covering the tone around F4, the *secondo passaggio* point for many tenors, which presents problems for repertoire with pitches above that. Liebling offers simplistic advice like "Now, do not be fearful; go ahead and you will sing a fine, full-bodied 'covered' tone."[77] While this is a lovely message of encouragement and motivation, these instructions do not provide enough descriptive language to elicit a consistently successful outcome from students.

EXAMPLE 6.1. Exercise for developing "head register."[78] Recommended by Estelle Liebling. Reproduced with permission of Alfred Publishing, LLC.



Richard Miller provides a detailed explanation of a three-register system under conscious differential muscular control. Describing a dynamic balance between engagement of the cricothyroid muscle and thyroarytenoid muscle, Miller advises a strategy of gradual register transition. The table in Table 6.2 delineates the balance of musculature through the pitch range and includes the typical *passaggio* pitches for lyric tenor.

[77] Liebling, *The Estelle Liebling Vocal Course for Tenor*, 23.
[78] Liebling, 44.

TABLE 6.2. Dynamic Balance of Laryngeal Muscles Throughout Pitch Range.

Part of Range	*Laryngeal Muscular Balance*	*Register*
Lower	Thyroarytenoid (TA) Dominant	Chest (*voce di petto)*
Lower Middle	TA > CT	Chest Mix
Upper Middle	TA ⇌ CT	Full Mix (*voce misto*)
Upper Voice	TA < CT	Head Mix (*voce piena in testa*)
Highest	Cricothyroid (CT) Dominant	Falsetto

Source: Data from Richard Miller, *Training Tenor Voices* (New York: G. Schirmer, Inc., 1993), 65.

Liebling's aversion to the *voce piena in testa (*full voice in head*)* is contrary to what we see in Miller. Mapping Liebling's suggestions for head voice onto the above figure, we would see a disappearance of the dotted circle and a shifting of "falsetto" to the upper voice section, essentially shortening the pitch range significantly and creating a more abrupt timbre change in the upper range.

For the sake of a valid comparison, one must first contrast Miller's instructions for falsetto training to Liebling's head voice section before moving on to a discussion of Miller's instructions for head voice (*voce piena in testa*) training. Miller recommends using falsetto as an onset exercise to find the *voce piena in testa*. This exercise is often called the "Register *Messa di Voce,*" in which the singer begins in falsetto and increases breath energy and muscular closure to transition into full head voice on the same pitch. The purpose of this exercise is to avoid the laryngeal muscle-setting that young tenors often utilize. Miller is careful to note that such falsetto exercises are intended only to address tension in the *zona di passaggio* or for comic purposes or occasional effects in *Tenorino* and *Leggiero* literature; he notes "falsetto has no place in performance."[79]

Miller then describes a register called *Voce finta* (feigned voice), which has more vocal fold occlusion than falsetto and requires less breath energy than full head voice. Miller identifies

[79] Miller, *Training Tenor Voices*, 65.

this as a color tool more than a register but suggests a physical adjustment via lifting the chin and head to shorten the vocal folds and alter the shape of the vocal tract to achieve this tone.

When it comes to approaching and sustaining the high range, Miller states succinctly that the required considerations are an increase in breath energy and an increase in volume. One can understand more about his techniques for high tessitura singing by studying his descriptions of vowel modification cover. Miller presents two schools of thought on covering; he calls one a Germanic/Nordic school and the other an Italian *Copertura* school. The Germanic/Nordic school, which throughout the chapter he implies is not ideal or efficient, is a heavy mechanical adjustment involving conscious laryngeal depression, spreading of the pharynx, excessively depressing the epiglottis, and pronounced narrowing of the laryngeal collar. One result of this method is that vowel definition disappears in the upper range because of the amount of supraglottal resonance distortion due to over-opening and pressing of the vocal tract. This creates a similar sound to the Liebling "AW" method of cover, but presumably with a larger amount of subglottal pressure and overblowing.

The Italian *Copertura* method is a gradual adjustment (*aggiustamento)* of vowel shapes to adjacent vowels. Miller's vowel modification chart in Figure 6.3 shows the neighbor vowel sequence. Miller does not subscribe to a one-size-fits-all method for cover, but suggests that singers consider the amount of *chiaroscuro* balance they desire and adjust accordingly. Miller does, however, recommend staying within close proximity of the original vowel to maintain intelligibility.

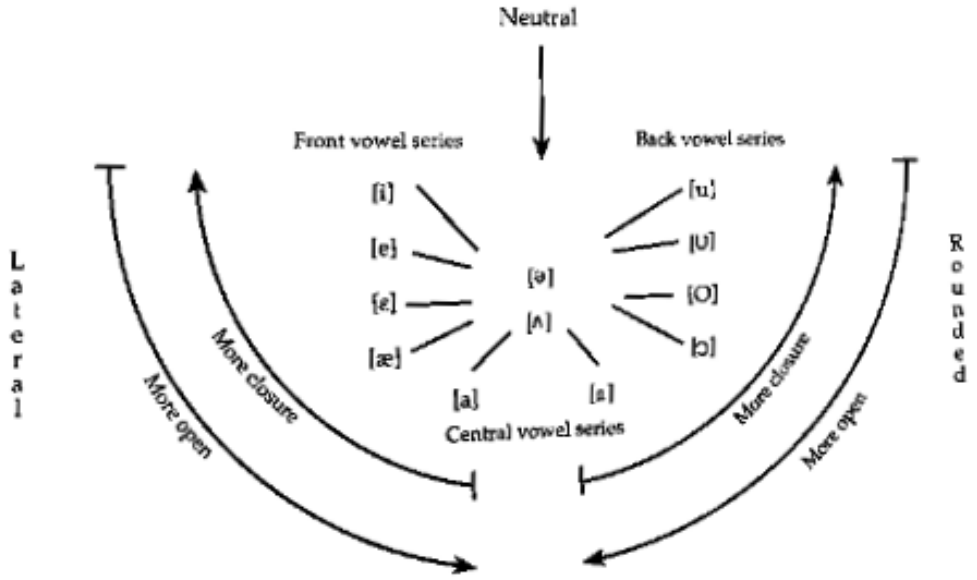


FIGURE 6.3. *Copertura* Method Vowel Chart.[80] Reproduced with permission of Oxford Publishing Limited through PLSclear.

There are many aspects of tenor registration on which Miller and Liebling agree. Both ascribe to a three-register system in theory, although Miller's method provides three usable performance registers while Liebling only provides one large usable register. The greatest difference appears in relation to head voice and falsetto. Miller regards these as two different register options, while Liebling completely denies the existence of a full head voice. Liebling's strategies for cover most closely resemble Miller's description of Germanic/Nordic covering, which Miller implies is inefficient favoring a more gradual transition. Finally, it is apparent Miller believes that navigating the upper range of the tenor voice is a complex task worthy of nearly 50 pages of instruction, while Liebling provides only one page on which she shows a lack of empathy by describing it as a "simple task."

[80] Miller, *Training Soprano Voices*, 125.

Resonance

Much of Liebling's resonance instruction for tenor is similar to that for the other voice types, both male and female, because of her insistence on the lack of a distinct male head voice. Because Liebling equates the male head voice with falsetto, her resonance strategies for falsetto are identical to those utilized by the female head voice, including dropping the jaw and modifying to tall, open vowels. Liebling suggests exercises that develop the upper middle register, not exceeding the *secondo passaggio* transition into falsetto. These exercises are all scalar and primarily utilize the consonants [m], [l], and [s], and the vowels [i] and [a]. Liebling's continued insistence on sensations in the mask is validated by the use of [m] and [i]. Her choice of [l] and [a] are likely intended to promote the dropped jaw and "AW" position she advocates in the higher range, while [s] is used as a pilot consonant for breath connection. The consonants [s] and [l] also promote a high position for the larynx, which would make transitioning into a full tenor head voice extremely difficult.

Because of his access to spectrographic technology, Miller was able to quantify and describe the Singer's Formant in a way that Liebling could not. The singer's formant, now referred to as the Singer's Formant Cluster (SFC) because of its inclusion of the third, fourth, and fifth formants (F3, F4, F5), is a frequency band between 2,500 and 3,000 Hz that gives the male voice it's characteristic "ring."[81] Today, this ring is considered paramount in the *voce piena in testa* sound. Miller suggests use of the vowels [i] and [e] for finding resonant sounds in the tenor voice because these vowels have natural energy peaks in the Singer's Formant location. As the tenor ascends into the upper range, front vowels can be used as pilots to guide more open vowels

[81] Singer's Formant is present in all well-produced operatic voices. However, the singer's formant is less important in the soprano voice because the sung pitch is usually so high that the second formant (2x the Hz of the fundamental pitch) is often at or above the level of singer's formant. When the fundamental pitch is raised, the formants become more widespread and therefore the F3, F4, and F5 of the soprano voice are out of the range of human hearing. For a comprehensive explanation of acoustics and its application to voice training, see Kenneth Bozeman's *Practical Vocal Acoustics*.

into a slightly closed position. For example, Miller suggests the use of [æ] as a pilot to back vowels such as [a] and [ɑ] because it is the closest front vowel in the series. This approach mirrors Miller's *aggiustamento* suggestions for modifying to a neighboring vowel, in this case, modifying toward a more closed vowel in the tenor voice.

Miller suggests that the tenor pay attention to sensations in the nose and face for all nasal continuants to achieve balanced resonance. For the tenor, Miller is specific in locations of sensation, for example using [m] directing sensation toward the lips and [n] to the zygomatic area. This contrasts with his strong opinion stated in *Training Soprano Voices* that descriptions of sensation are not helpful or reliable.

Baritone, Bass-Baritone, and Bass Voices

Much like the mezzo-soprano, who was once included under the name "soprano," the term "baritone" and its modern definition is a relatively new development. The term "bass" is typically used throughout the Baroque and Classical era for roles that are today often cast for baritone voices, and which display the typical baritone range. Miller notes in *National Schools of Singing* that the number of true bass voices, one of the rarer voice types, in these earlier periods is likely similar to the percentage of bass voices today, only the terminology describing these voices has developed to describe the variation in the low male voice.[82] Where once all lower male voices were described as "basses," today we have terms for many types of baritone and bass-baritone.

Characteristics that define a baritone, bass-baritone, or bass are generally range and vocal color. Miller suggests that certain body types are more likely to house baritone or bass voices.

[82] Miller, *National Schools of Singing*, 164.

> The vocal prominence (Adam's apple) of a bass is quite visibly located in a longer, thinner neck than that of the tenor, whose smaller thyroid cartilage lies hidden in his thicker, shorter neck; the flatter chest of the bass is in clearcut contrast to the thick, often compact torso of the tenor… Frequently, the heavier tenor instrument and the big Lyric baritone one are found in persons of similar physique, both being stockily built… The baritone, depending on how lyric or how dramatic, will tend toward either the more compact or the more elongated build.[83]

Of course, even though external physical traits can indicate similar internal physical traits like greater lung capacity in a larger chest cavity or a longer vocal tract in a long neck, all generalizations do find exceptions.

Miller's choice of the term "Securing" in his title *Securing Baritone, Bass-Baritone, and Bass Voices* rather than "Training" as in *Training Tenor Voices* and *Training Soprano Voices* is a clear signal that he perceives a difference in the methods between these voice types. Indeed, "securing" implies an existing, perhaps natural, technique apparent in the low-voiced male. In contrast, Liebling's course for baritone and bass-baritone includes several instances of baritone-specific instructions that are not present in her other courses, which also indicates a difference in technique, but implies the need for a more thorough process of training rather than securing.

Respiration

Where breathing is concerned, Estelle Liebling's recommendations for baritone and bass-baritone are the same as her recommendations for the other three voice types in her vocal courses. Once again, Liebling published the exact same beginning eighteen pages that describe the breathing mechanism, the basics of phonatory anatomy, the definitions of resonators, and general remarks on musicianship. Liebling's approach to breath most strongly resembles what Miller describes as the French School of breathing. Singers instructed in the French method are encouraged to maintain good posture and relax while allowing the body to breathe naturally.

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[83] Miller, *National Schools of Singing,* 164.

Liebling's suggestions to use an adapted Farinelli exercise to speak the alphabet on exhalation exemplifies this preference for natural breathing.

As with the tenor, Liebling warns of the male tendency to push in an effort to sound "big" and "virile." The "short breath" psychology exercise she offers for the baritone is identical to that offered for the other voice types, except that it is written at a comfortable baritone pitch. The short breath exercise is useful in that it gives the singer theoretical knowledge of the amount of breath needed for a particular phrase length. However, this exercise does not build stamina for longer phrases and may result in the singer "tanking up," or inhaling as much air as possible without complete prior exhalation, which causes stiffness in the breathing and laryngeal musculature. Liebling offers no baritone-specific breath instruction in this course.

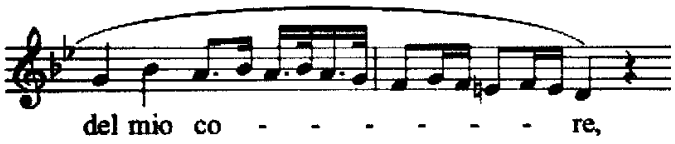
Richard Miller's breathing strategies for baritone and bass-baritone are identical to those he suggests for all singers. Consistent descriptions are given throughout of antero-lateral-dorsal *appoggio* breathing with nothing specific regarding *Fach*. Unlike Liebling, Miller does not offer comment on typical tendencies like "pushing," the practice of locking the abdominal muscles into a contracted position during exhalation and singing at a louder amplitude and more forcefully than is comfortable. In *Securing Baritone, Bass-Baritone, and Bass Voices,* Miller describes *appoggio* as "dynamic equilibrium" among the torso, thorax, and laryngeal musculature. This strategy lies firmly within the Italian School of Singing. Miller even claims that to a proponent of the Italian School of Singing, "the low breathing techniques and outward abdominal pressures of the German School of Singing [are] functional violations, contrary to natural processes."[84] The breathing methods he describes as German involve low abdominal distension and collapsed sternum, the "down and out" method, termed *Bauchaussenstütze*. The

[84] Miller, *National Schools of Singing*, 24.

English School of Singing method involves exaggerated chest elevation, costal locking, and lower abdominal tucking, the "up and in" method.

Like Liebling, Miller lists several of the same consonants as tools for building baritone breath awareness. Miller suggests sustained voiced consonants [m], [v], and [z] as ideal choices for bringing awareness of the lateral and frontal abdominal muscular activity at work in *appoggio* breathing. While Liebling suggests exercises that are fully sustained or fully agile, Miller's exercises offer varied rhythms that require maintenance of flexibility between breath and larynx, as in the excerpted measures from Antonio Caldara's "Selve amiche" in Example 6.4.

EXAMPLE 6.4. "Selve amiche" by Antonio Caldara. Displaying varied rhythms that require *appoggio* flexibility.

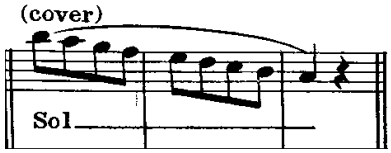


Registration

Liebling theoretically describes a three-register system, but her exercises suggest that she believes in a one-register system for baritone, bass-baritone, and bass. Liebling provides the same description of head voice as in her tenor course, equating the male head voice with falsetto and proclaiming it only useful as an exercise to build a relaxed throat and good breath control. Liebling addresses cover in her characteristic nonchalance as a "simple matter" of placing the mouth in the "AW" position, aiming the tone through the bridge of the nose for a slightly nasal quality, and maintaining full breath support. Liebling assures the singer that, despite the use of a neutral "AW" vowel, the audience will be able to understand the intended vowel and be unaware of the vowel mixture as long as the singer THINKs the original vowel. Example 6.5 presents a

descending ninth exercise on "Sol" in which Liebling instructs the singer to cover but does not address when to transition out of cover and back to the authentic vowel shape on the descent.

EXAMPLE 6.5. Cover exercise for baritone, bass-baritone, and bass.[85] Recommended by Estelle Liebling. Reproduced with permission from Alfred Publishing, LLC.



The skills of relaxed throat and good breath control are essential to Liebling's training of the baritone, bass-baritone, and bass low range. She addresses the importance of the low range for the baritone, bass-baritone, and bass voice:

> All voices must be able to sing easily throughout their entire ranges. But, as the basses establish the harmonic foundation, their low tones are somewhat more important than the low tones of the other voices. Now, as the low tones have the slowest rate of vibration, obviously a greater degree of RELAXATION of the entire vocal mechanism is necessary. This is true of all voices. However, since basses are required to produce their low tones more often than the other voices, they must be able to relax into those low tones more quickly than the other voices. For these reasons basses should NOT END ON HIGH TONES IN THEIR STUDIES. Instead, they should immediately follow the final high tones with a few passages from MEDIUM TO LOW TONES. (baritones may do the same, but it is not as essential for them.)[86]

For singing these lowest tones, Liebling describes a three-step process: "(1) point the lips forward (especially the lower lip), (2) RELAX the abdominal muscles a bit, and (3) mix the vowels with AW."[87] For Liebling, the neutral "AW" is the vowel of choice for both ends of the range, but she does not clarify how high or low to carry this vowel modification.

Miller describes several potential register timbres for low male voices, including *voce di petto* (chest), *voce mista* (mixed), *voce piena in testa* (full voice in head), *voce finta* (feigned

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[85] Estelle Liebling, *The Estelle Liebling Vocal Course for Baritone, Bass Baritone, and Bass* (New York: Chappell, 1956), 23.

[86] Liebling, 34.

[87] Liebling, 34.

voice), and *falsetto*. The primary registers addressed are the chest, mixed, and head registers. For the low-voiced male, the *primo passaggio* lies in the spoken range and therefore usually requires little technical intervention. The *secondo passaggio* in the low-voiced male is less straightforward. The register transition from the *voce mista* into the *voce piena in testa* requires adjustment in breath management and vowel modification. The adjustment in breath management when approaching the *secondo passaggio* is uniform for all voice types. An increase in subglottic pressure is required to balance the increase in adduction (closure) of the vocal folds as pitch ascends.

Vowel modification varies for baritone, bass-baritone, and basses. According to Miller, there is no single rule regarding to what extent all low-voiced males will modify a vowel. Some lyric voices may modify toward a more closed vowel, while others may modify toward a more open vowel. Although Miller recommends moving only one neighboring vowel location when modifying in the other voice types, he allows for flexibility in the exact degree of vowel modification that results in equalized timbre. The pitch location at which a low-voiced male must begin to modify the vowel differs as well. Bass-baritones and basses will begin modifying at lower pitch levels than baritones, but the pitch location is not standard among bass-baritones and basses. The guidepost that Miller provides for the low-voiced male is the uniform sound. The use of gradual register transition via vowel modification and graduated breath adjustment avoids the risks of carrying chest timbre too high, including vocal strain and unexpected switches into the falsetto register. Miller suggests a "grand *passaggio* vocalise" encompassing a major seventh range, beginning in the lower middle voice and moving through and above the *secondo passaggio*. Although Liebling is adamant that low-voiced males, especially basses, must complete all singing exercises on low notes, many of the literature examples Miller provides have phrases that build to a high note ending.

When addressing covering the voice for baritone, Miller takes a tone similar to Liebling's nonchalance, stating that "natural modification of the vowel – together with an increase in breath energy – automatically assists in 'covering' the phonation."[88] Although this process can occur automatically, Miller notes that back vowels, such as [ɑ] and [o], can require greater modification toward forward vowels, which naturally have higher harmonics. In light of this, Liebling's insistence that all covering involves a neutralization toward "AW" would result in a tone with fewer high partials that may require overcompensation of breath to avoid sounding dull or having flat intonation.

Resonance

In her baritone exercises, Liebling favors beginning with the consonants [f], [b], [n], and [m] and the tongue fronting [j]. This is a contrast to her tenor exercises, in which she leans primarily on [l] and [s]. Liebling also utilizes the vowels [o] and [ɔ] ("AW") most frequently, with an occasional [i] sandwiched between the more open vowels. For example, Liebling suggests the same exercise for tenor and baritone, a 1-3-5-3-1 quarter-note pattern, but for the tenor she suggests a repeated "la" while the baritone is encouraged to sing "Na-Ni-Na."[89] Liebling offers specific instruction in her baritone/bass-baritone course, that the "consonants should act to PLACE THE VOWELS FORWARD IN THE MOUTH."[90] In all of her vocal courses, Liebling asserts that correct tone production causes a "distinct sensation of vibration in the front of the face, the mask." While sensation can be a powerful tool for singers to build muscle memory, the type and location of these sensations can vary dramatically between voice types and individual singers. Especially in baritone voices, chest sensations are described more often than mask sensations.

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[88] Miller, *Securing Baritone, Bass-Baritone, and Bass Voices*, 88.
[89] Liebling, *The Estelle Liebling Vocal Course for Baritone, Bass Baritone, and Bass*, 21.
[90] Liebling, 24.

Position and use of the tongue make up a large part of the resonance balancing instructions in *Securing Baritone, Bass-Baritone, and Bass Voices*. Miller lists several tendencies of male singers with low voices, including drawing the tongue back into a retroflex posture, raising the apex of the tongue toward the hard palate, placing the top of the tongue below the roots of the lower front teeth, curling the sides of the tongue away from contact with the teeth, and turning the tongue slightly to the left or the right. Like Liebling, Miller uses pilot consonants to guide the singer toward an appropriate resonance balance. Miller recommends pairs of voiced and unvoiced consonants, such as [b] and [p] to encourage the tongue to retain a neutral posture. These consonants are then placed before select vowels such as [be] and [bi] to act as a pilot to start the tone with the tongue in the correct place for the vowel.

Another aspect of resonance in low-voiced males that Miller focuses on is vibrato. Miller describes the vibrato faults that are common to other National Schools of Singing, including "tremolo," in this instance meaning fast vibrato in the French School of Singing, "wobble," or overly wide vibrato, in the German School of Singing, and straight tone, or no vibrato, in the English School of Singing. For correction, he recommends fast agility passages, "silly" overly emotional speech, and bilabial pilot consonants such as [b].

The use of pilot consonants, particularly bilabial consonants is an aspect of both Miller and Liebling's technique for baritone, bass-baritone, and basses. The emphasis placed by both on bilabial consonants for use in tongue fronting and vowel piloting suggests that overly throaty singing resulting from tongue tension is an error common to the low-voiced male. A complementary error mentioned by both authors is the tendency for "oversinging" by low-voiced males. Miller states that "forty years ago, it was common for an immature male singer to bring excessive energy and tension to the onset and to the phrase."[91] The forty years prior to which

[91] Miller, *Securing Baritone, Bass-Baritone, and Bass Voices*, 184.

Miller refers aligns with the era in which Liebling was actively teaching. *The Estelle Liebling Vocal Course for Baritone, Bass-Baritone, and Bass* (1956) was published fifty-two years before Miller's *Securing Baritone, Bass-Baritone, and Bass Voices* (2008). Liebling's baritone course also mentions a tendency for low-voiced male singers to attempt to sound "big" and "virile." For this tendency to be observable even before Liebling's publications implies that it is a commonality among the *Fach* rather than just an era-dependent style as suggested by Miller.

CHAPTER VII

CONCLUSIONS

Regarding the training of breathing for singing, the methods of Richard Miller and Estelle Liebling reveal very different approaches. Both emphasize the importance of good postural alignment, but Liebling emphasizes alignment along the back of the body while Miller emphasizes it along the front. Liebling places the most importance on the inhalation phase, with exercises that increase the amount of air the singer could inhale. Miller stresses the exhalation phase, with exercises that focus on what he called the "onset-breath-renewal maneuver." Liebling's vocal courses all feature the same pages on breathing, regardless of voice type. Although Richard Miller mentions differences between male and female anatomy regarding the distance between the tenth rib and hip bone, he only recommends awareness of this, not a difference in technique. Ultimately, the difference in breathing approach between these two authors is more of a reflection of their technical views irrespective of gender.

Both Miller and Liebling describe a three-register system for singing, but the way they approach navigating these registers is different in both strategy and perception. Liebling believes that singers remain unconscious of register transitions when they are correctly sung. Miller, on the other hand, believes in conscious manipulation of factors such as vowel modification, breath energy, and dynamic for register transitions. Liebling suggests a one-size-fits-all method for vowel modification while Miller recommends an opening of the vowel for soprano, a closing of the vowel for tenor, and either option for low male voices. To Liebling, there is no such thing as a male head voice, citing the falsetto as the higher male register. Richard Miller believes in a male full head voice that is separate from falsetto, called *voce piena in testa* (full voice in head).

Many of the resonance balancing techniques mentioned by both authors are similar to their registration blending techniques. Both authors suggest that vowel modification is paramount to proper resonance balancing and both stand by their recommendations, Liebling using the neutralization toward "AW" and Miller recommending *aggiustamento* to a neighboring vowel. While Liebling depends primarily on sensation, Miller takes a strong stance against sensation as an instruction tool, relying instead on scientific language. Miller's reasoning for avoiding discussions of sensation is a belief that singers may have difficulty understanding the difference between the location of the sensation and the location of the origin of the sound. For mezzo-sopranos, neither author gives any specific information regarding resonance. Again, a hybrid method that utilizes the tongue fronting exercises of the low-voiced male and the vowel modification guidelines for soprano is likely to be most effective.

Recommendations for Teachers

Despite some differences in teaching between genders, *Fach* may not be the best guideline to determine voice training methods. The best course is to avoid suggesting a *Fach* until the student has developed a reliable breathing technique and balanced resonance. Misclassification is common, because the decisions involved are dependent upon the perception of the teacher and the student's existing technique. A young or inexperienced singer may, at first, sound like a baritone but eventually develop into a tenor. If teachers were to teach this singer only those techniques suggested for baritone, he may never develop his upper range or tenor timbre and is likely to develop habits of laryngeal depression and overblowing to mimic the baritone timbre.

The differing exercises for each *Fach* are related more to common technical issues than any underlying physiological differences. Generalizations of the baritone voice type relate to pushing excess breath energy, tongue tension, and laryngeal depression. Generalizations of the

tenor and soprano voice types relate to not utilizing enough breath energy to navigate the *secondo passaggio* transition as well as methods of vowel modification. Generalizations of the mezzo-soprano aren't mentioned by either author, except for Miller's pejorative description of "mooing mezzos." Although these generalizations are based on some truth, a more useful title for Miller's books may have been "Securing High Energy, Low Tongue Position Voices" or "Training Under-Energized, Overly Bright Voices." In other words, it is more beneficial for the voice teacher to teach according to the specific technical issue than voice type.

This is not to say that voice type does not influence the effectiveness of learning between teacher and student. Though many teachers are equipped to teach all voice types and genders, not all students are equipped to learn across gender. Although Miller insisted that modeling good singing is effective regardless of gender, my personal experience as a student and teacher suggests that this is not always the case. Despite the correctness and clarity of the modeled sound, the student may not be able to hear the technical aspects the teacher is displaying, especially across gender. Students who study with teachers of the same gender may have more success from teacher modeling due to imitation, a skill at which many singers excel. While imitation is not ideal in finding the student's individual sound, it is a valuable step in developing a kinesthetic awareness of the technique.

It is beneficial for teachers to read books and utilize exercises from both authors. Liebling's vocal course books are presented in simple language and addressed to the reader and therefore are more suited to the student and beginner audiences. Miller's books are more technically worded and addressed to the teacher, but are also suited to advanced singers, or to collaborative work between teacher and student.

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