

Chapter 1

Speaking and Singing

Just as all dance is based in walking, so is all singing based in speaking. Speech is a form of communication that has music to it through inflections that carry meaning. Lengthen and exaggerate those inflections, and you get something more like what we call singing that has a heightened sense of meaning. The whining child saying “but I don’t WAAAANT to!” has clearly communicated his desire. The schoolyard taunt of “nya nya nya nya nya” further blurs the line between speech and singing. The addition of pitches and rhythms—melody—to a text creates true singing,¹ the melody adding another level of emotional content to the words². Still, all succinct communication lies with the words and the ability of the singer to communicate them to the audience in speech-like patterns. Singing is speech. This is the heart of the technique.

There is, simply put, no better way to sing. This technique will give you the principles that allow your voice to do all that it is capable of. All the vocal sounds that need to be made on the stage or in the studio, from the most Operatic High C to the most wickedly belted F, to a whisper or a scream or a growl, can be produced healthily using the principles put forth in subsequent chapters.

I.1 Definition of Belting

Belt is a term in singing that has its roots in the traditions of Musical Theatre, although surely the sound itself, and the use of it in singing, is as old as speech. Belting, as used in this

¹ Elizabeth Margulis, in her book "On Repeat" [Margulis, E. H. (2013). "On Repeat: How Music Plays the Mind."] discusses the speech-to-song illusion in detail, and argues that a strong reason for the perceptual shift from speech to song is that repetition is a fundamental characteristic of music, though not of speech. Repeating the spoken phrase therefore causes the listener to transform it perceptually so that it is heard as sung rather than spoken.

² The study of semiotics quickly comes into play when we begin talking about the communication of emotional states through melody. That is beyond the realm of my discussion and expertise, but I have a feeling semiotics is at the heart of everything we do in singing. At the very least, music, through the act of repetition, reduces rational thought processes, instantly resonating on an emotional level.

tradition, is commonly thought of as a brilliant, cutting tone quality based in the typically broad vowel pronunciation of the Eastern Seaboard of the United States (similar examples include Cockney and other broad-voweled dialects in English and other languages). It contrasts in quality with the Classical Western European Operatic tradition of singing, which is based in an effort to create “pure” vowel pronunciation, resulting in a much less colloquial sound quality than Belting. Prior to the advent of a practical means of amplification for stage singing, and as the styles of singing needed for Musical Theatre began to differentiate further from the style needs of Opera and Operetta, Belting was a style that developed to clearly identify the character as not-Opera (and therefore common, of-the-people). Belting also developed as a means to sing clearly through the pit orchestra, using a different acoustic strategy than Opera. In the Operatic tradition of singing, one goal of the training process is the development of the Singer’s Formant, tuning the vocal tract to produce a ringing sound at around 3000 hertz. An orchestra produces relatively less sound in the 3000 hertz range, which allows the operatically trained voice to “sing through” and be heard³. In Belting, the tuning of the vocal tract and the vowels to produce almost equal dynamics throughout the sound spectrum allow the voice to compete with a pit orchestra at many levels.⁴ The voice is heard through sheer volume of sound, and gives the Belt tone a brilliant, cutting quality.

I.2 Traditional Belt Model: Women

The traditional model for Belting requires extensive use of the adductor muscles within the larynx, specifically the inter-arytenoid muscle, to bring the vocal folds together and to cause a

³ “...the orchestra produces lots of energy at around 500 Hz, but falls off steadily at higher frequencies, producing relatively little around 3000 Hz. The well-trained operatic voice produces quite a bit of energy around 3000 Hz, however, and so it can be heard even above the orchestra.” Quotation from <http://www.ncvs.org/ncvs/tutorials/voiceprod/tutorial/singer.html> accessed on 9/11/2015.

⁴ More about vocal spectrums and spectrographic analysis can be found in Appendix ?. I found in my research that some singers, while Belting, are able to produce sound above 20,000 hertz, above the range of human hearing.

thickening of the vocalis muscle. This causes a darker sound quality and a natural upper limit to the Belt range of around a B^b_4 for most women.⁵ Most singers and teachers of singing refer to this range as Chest Voice. Above B^b_4 , typically, the vocal folds cannot sustain the intensity of a thicker vocalis muscle, causing a sudden adjustment relaxing somewhat the adductor muscles. This adjustment results in a lighter tone quality that can be described as Head Voice, or in extreme cases, resulting in a thin and breathy tone.⁶ Below B_4 there can be an effort to reduce the adduction of the inter-arytenoid muscles, leading to a thinner position of the vocalis muscle and the production of Mixed Voice or a Head Voice dominated tone quality. Lyric singing is a result of encouraging the thinnest possible position of the vocalis muscle throughout the vocal range. Lyric singing is the goal of most vocal studios teaching in the tradition of the Classical Western European Operatic model.

I.3 Traditional Belt Model: Men

Belt dominates the range of most men's voices, causing men's voices to function somewhat differently than women's voices. There are teachers of singing that will argue men cannot Belt, others who argue men only Belt, and some who will say men can do both. For men, it comes down to the quality of tone preferred, which allows for a more generous definition of Belting. Regardless, men can produce tones using the same adductor muscles in the larynx as women, resulting in a thicker vocalis muscle and the production of Chest Voice. Most men will be able to carry this upward in range to about F_4 , often resulting (without adjustments to the vowel and support mechanism) in a strained tone quality as the F_4 approaches. Above F_4 the vocal folds can no longer sustain the thicker position and abruptly change, resulting in the ubiquitous "crack" associated with

⁵ To denote pitches and ranges, I will use C_4 as middle C. Thus, any note with the substrate of $_4$ would be in the octave immediately above middle C. C_5 would begin the next octave. C_6 is High C.

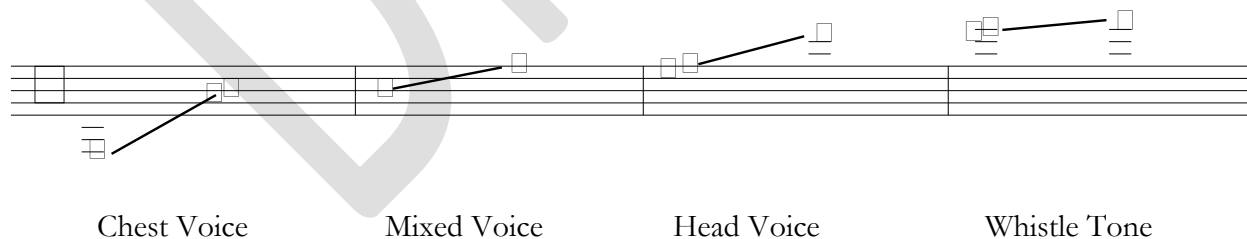
⁶ Some styles of singing, notably some pop singers and some R&B singers, prefer the sudden change in tone quality, but for most styles, that sudden change is to be avoided. We will discuss this further in the chapter on Training the Belt and the chapter on Style.

untrained or developing voices. Above F_4 men sing in Head Voice, which leads eventually to a final shift resulting in Falsetto (more about this later). Below F_4 , when not Belting, there can be an effort to reduce the adduction of the inter-arytenoid muscles, leading to a thinner position of the vocalis muscle, and the production of Mixed Voice or a Head Voice-dominated tone quality. This tone quality is often lighter in nature, and is the preferred tone quality of Classically-oriented ears. As in women's voices, Lyric singing is the result of encouraging a lighter registration and thinner vocalis muscle throughout the entire range.

I.4 Traditional Model of Vocal Registers

A vocal register is a range of the voice that is produced using the same or similar adjustments of the larynx, throat, and vowel production. In the traditional model⁷, the registers of the voice can basically be identified as follows, allowing for minor register event alterations⁸ as necessary for voice types:

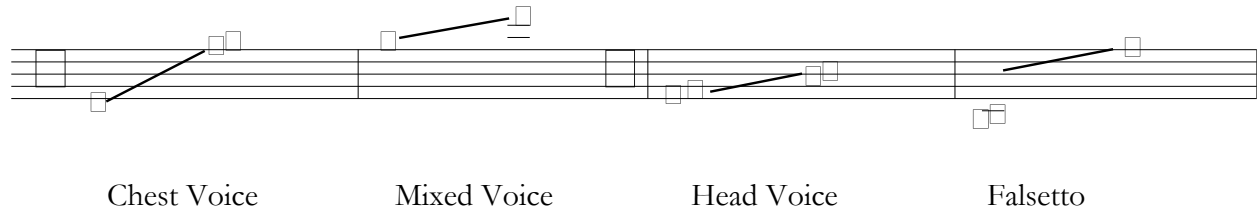
Register Events for Women's Voices, Generalized Traditional Model:



Register Events for Men's Voices, Generalized Traditional Model:

⁷ In his book [The Structure of Singing](#) Richard Miller discusses in detail the traditional model of vocal registration, supplying clear charts for each voice type. I have summarized his charts.

⁸ The examples given here are for the two most common voice types, the Soprano and the high Baritone. Lower female voices will have lower pitched registration events, while Tenors will have higher registration events than listed here, average Baritones and Basses lower.



The traditional Classical Western European Operatic model of singing taught in studios is based on the widely accepted vocal register events associated with Chest Voice, Mixed Voice, and Head Voice, with the addition of Whistle Tone for women and Falsetto for men. I'd like to propose an alternative model based on natural speech patterns.

I.5 A New Definition of Belt

To begin to understand this technique and the way to approach singing, we must first make the assumption that Belt is Speech. When I refer to Belt, I am referring to a sound quality based in speech sounds and patterns rather than the vocal registers as referenced above. Belt is not chest voice. Belt is singing with intention using a technique that promotes healthy singing through the use of a bite that causes a constriction of varying degrees of the laryngeal pharynx, the region of the throat directly above the larynx. Because Belt is no longer a register event, but is instead a quality of sound controlled above the level of the larynx, Belt is possible throughout nearly the entire range of any singer, including up to and above High C for many women and up to the top of the range in most men. We will begin discussing how to sing this way in due course. Accept for now that in the technique, because all singing is based in speech, and because all singing has a degree of bite, all singing is Belt. Remember at all times that Belt is speech.

I.6 A Definition of Legit

Lyric singing is produced by encouraging Head Voice domination in the position of the vocalis muscle, along with attention to the quality of the vowel, attention to legato, and similar goals associated with artful Operatic (Classical) singing. Legit⁹ singing shares these goals, with the exception of Head Voice domination of the vocalis muscle. In its place, Legit singing uses a bite position similar to Belt, except now the bite encourages the throat to open. This results in a tone quality that is warm, round, and full, identical in quality to Lyric singing, but produced with the same laryngeal considerations as Belt. Legit is lyrical in quality, but its basis of production remains Belt. Legit singing may be used throughout the singing range. Remember at all times that Legit is speech.

I.7 Singing with Intention

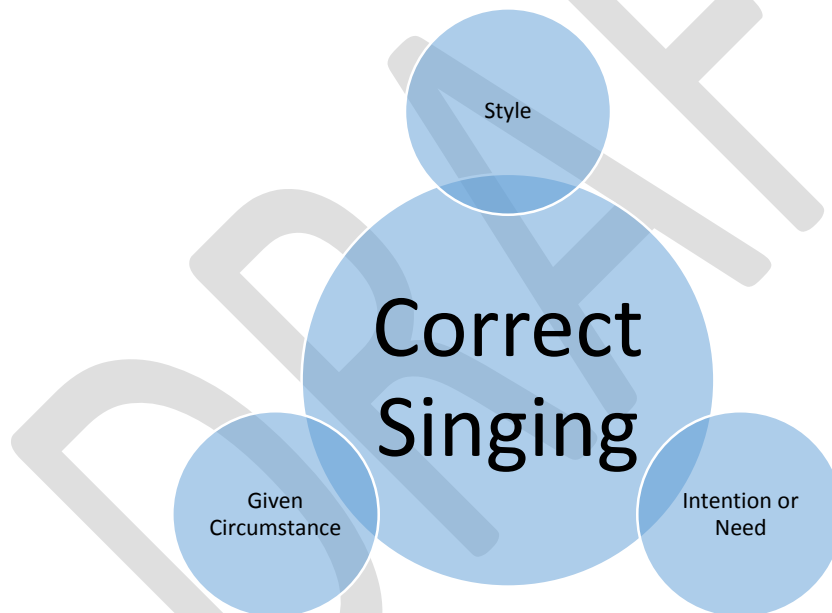
Since all singing is based in speech, and since Belt and Legit are produced with the same basic position of the vocal mechanism¹⁰, it becomes possible to switch between Belt and Legit based on the given circumstances of a character and the need displayed with the text. Making the assumption that singing is speech, the quality of tone and pronunciation characteristics a singer uses become choices based in the world of the character (be it Operatic, Musical Theatre, or a Pop/Rock song) rather than simply patterns learned and assimilated through study and observation. Beautiful singing is no longer the goal; the goal is to portray accurately the needs and intentions of a clearly drawn character. The result will *sometimes* be beautiful singing, but will *always* be character-driven and appropriate singing. As an example in Opera, the great dramatic soprano Maria Callas could, at times, display undeniably beautiful singing, and at other times create sung sounds that were far from beautiful. At all times, however, she was singing with intention based on the circumstances of the

⁹ The original use of the term Legit originated around the time of Bing Crosby in the 1930s. It described any type of popular singing that was not Opera and Art Song. I am redefining Legit to encompass any style of singing.

¹⁰ Please see appendix ? for data supporting the similarities between Belt and Legit.

scene, acting out the struggle of her character to get what she needed, and within the style that Operatic conventions demand.

This is the basis by which all singing should occur. By asking how would your character say these words (speaking) in this context (given circumstances) with this goal in mind (need or intention) within the style at hand (Operatic/Classical, Musical Theatre/Colloquial, Pop or some other Genre), you arrive at choosing the correct sound because of character considerations rather than vocal considerations. The degree to which you Belt or Legit and the degree to which you speak or sing becomes a consideration of character.

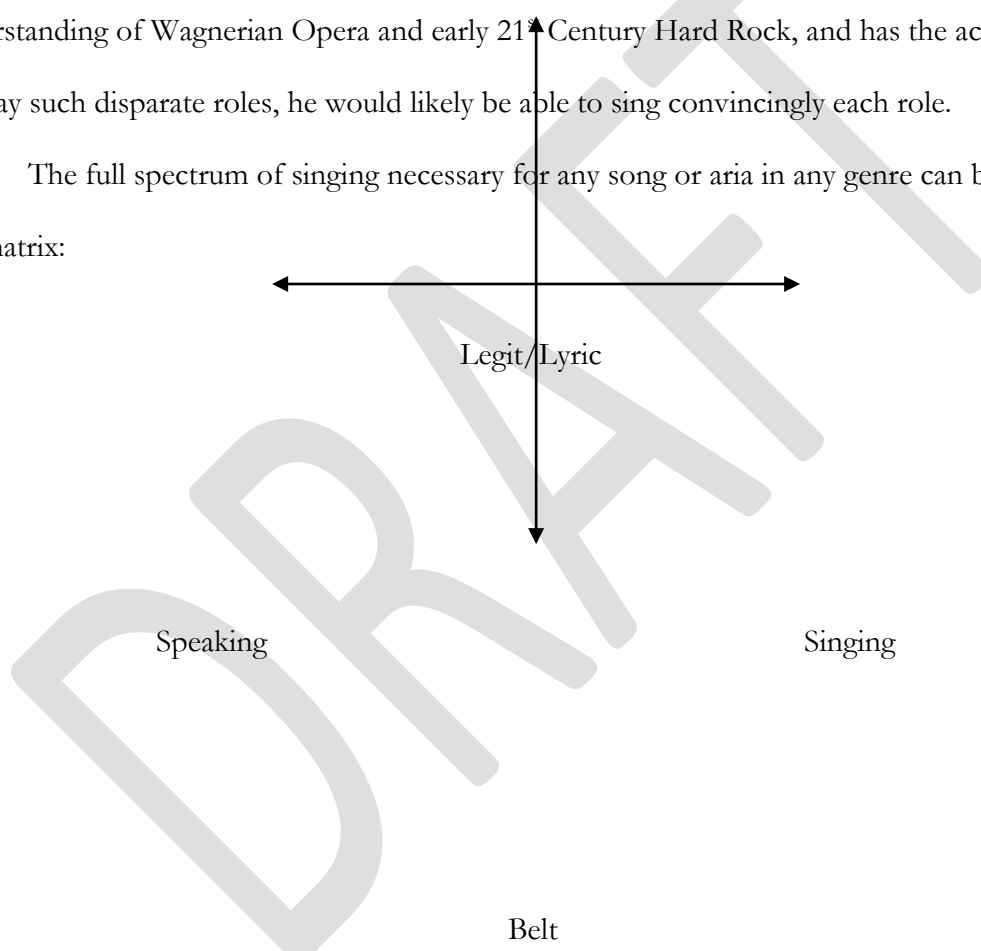


The choices required to accurately portray Siegmund in Wagner's *Die Walküre* and Hedwig in *Hedwig and the Angry Inch* are two contrasting examples of the choices that guide correct singing. Both roles are similar in range, vocal power, and intensity, and could conceivably be sung by the same voice.¹¹ The difference is in the choices to be made. Siegmund inhabits a world where it is natural to

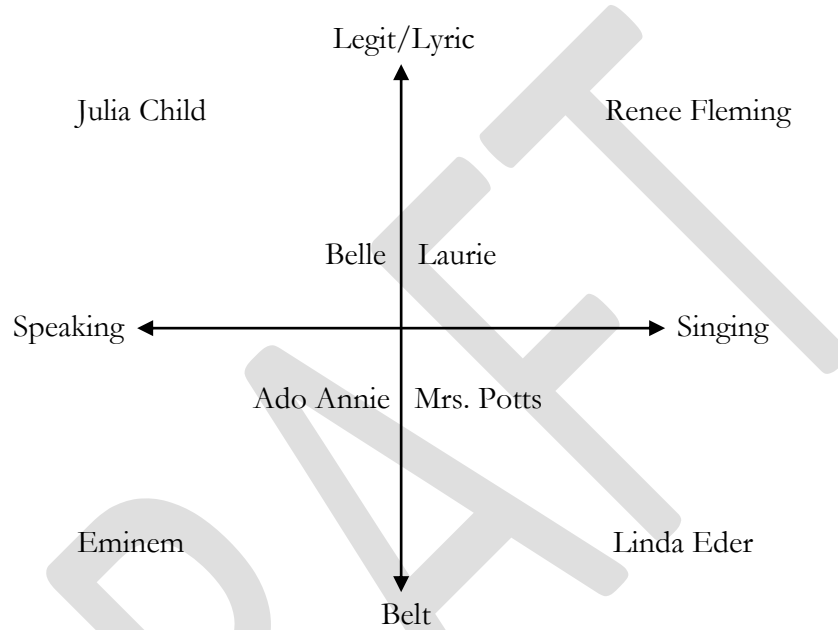
¹¹ In fact, one such voice was that of Peter Hoffmann, whose singing career spanned the Wagnerian Heldentenor roles and had great success singing Pop and Rock covers in Germany.

speaking in a legato, declamatory style that lends itself to ecstatic emotional outbursts near the top of his range. Hedwig lives in the underbelly of today, where it is natural to speak in a staccato, declamatory style that lends itself to ecstatic emotional outbursts near the top of his range. The mode in which they speak are not all that different. The difference lies in the conventions and expectations inherent in Opera and Rock. If such a remarkable singer exists, and the singer has a thorough understanding of the use of bite to control the degree of Belt/Legit, has a stylistic understanding of Wagnerian Opera and early 21st Century Hard Rock, and has the acting range to portray such disparate roles, he would likely be able to sing convincingly each role.

The full spectrum of singing necessary for any song or aria in any genre can be displayed by the matrix:



The matrix displays the full spectrum possible between absolute pure speech and absolute pure singing, as well as the full spectrum between the most Belted tone imaginable and the most Legit tone possible (I have included Lyric singing at this end, simply because singers not using Legit would be singing Lyrically as described above). Most singing falls somewhere near the intersection of the two spectrums, and is controlled by choices made regarding style and considerations of character.



The intersection of the elements are not exclusive. All singers flow freely within at least a narrow range that identifies who they are as a singer. Renee Fleming may sing near the absolute end of the spectrum regarding Singing/Lyric, but she will occasionally, based on choices she has made as an artist, lean a bit towards speaking or even creating some tones that have Belt-like qualities. And certainly Mrs. Potts will sing more while using less Belt in her more lyrical phrases.

One of the goals of the technique is to allow singers free reign on the above spectrum, within parameters of their native vocal qualities. Surely we don't want to hear Ms. Fleming belting out *Rose's Turn*. Or do we? The excitement of Ms. Fleming's voice producing a true Belt within the correct style of *Rose's Turn* would be every bit as satisfying as hearing Ethel Merman at the height of her career. It doesn't matter Ms. Fleming may not have the inclination to sing in a true Belt; what

matters is that she would be able to if the fancy should strike her. Surely Ms. Fleming's voice would not be as beautiful in a full Belt, but it would be *exciting!* And appropriate. What I do not want to hear is Ms. Fleming singing *Rose's Turn* in the style of *An die Musik*.

Style and acting choices are the two great drivers that should guide the artistic selection of singing on the matrix. The degree to which a song is sung or spoken is driven by the world the character inhabits. A well-born character will likely speak in a more legato cadence, and therefore should lend more singing quality to her songs. The same character will likely have a more mellifluous tone, and therefore should remain mostly on the Legit side of the matrix. Conversely, a character who is uneducated or rough or mostly comic in nature will likely speak in a more staccato cadence, and therefore should be more speech-like. The same character will likely speak with a gruff or harsher tone, and should choose to sing mostly in Belt. An important consideration of these two characters is the stylistic world, guided by aesthetic, they inhabit: the style conventions of Opera demand that any performer stay in mostly the upper right quadrant of the matrix, while Musical Theatre typically demands a more complete exploration of all four quadrants based on character considerations. Musical Theatre, being a popular Genre, is similar to Pop and Rock (and sometimes Jazz, R&B, and Rap), and is open to much more exploration of the entire matrix, based on the requirements of the character. A further demand of Popular singing is that the character always be true and honest in her vocal expression. This leads to the mostly Legit character having to sometimes Belt when emotions run high, and for the mostly Belt character having to sometimes sing Legit in her more tender moments. It is the singing actor's job to be able to move effortlessly around the matrix based on the emotional expression necessary to portray fully the character's need within the given circumstances of the scene under the umbrella of style.

I.8 A New Model of Vocal Register Events

Many teachers of singing who teach Belt believe in two divisions of Belt. The lowest Belt register is often referred to as Chest Belt, or simply as Belt, and encompasses the lowest notes of a singer's range up to B^b_4 in women and F_4 in men. The next higher Belt register is referred to as Head Belt or Mix, beginning at B_4 in women and $F^{\#}_4$ in men and encompassing whatever notes remain in the Belt range for a given singer. While this model acknowledges the natural shift that occurs in the vocal folds between the two registers, and corresponds to a change in sensation for the singer, it is an unnecessary distinction. Belt remains Belt, regardless of range, and the same goes for Legit. No finer definition is needed except to say Belt or Legit since both Belt and Legit are manageable on the spectrum. You cannot kind-of Belt, or kind-of Legit. You can Belt with different intention, which will change the degree of the Belt to match the need of the character. This will be discussed at length in the chapters on the techniques of Belt and Legit.

The voice naturally divides itself into registers based on speech patterns. Speech patterns derive from the vocal register divisions, not the other way around.

The first and lowest register is Basal Speech. This is the register where nearly all voices are most at home. It is the register of comfortable, everyday speech. The majority of all non-sung vocal utterance occurs within this range. The register occurs in women from the lowest notes to B^b_4 , and in most men from the lowest notes to B^b_3 .

The second and middle register is Emotional Speech. This is the register we use for impassioned speaking¹², emotional outbursts of joy or dismay, and cooing to babies or lovers. It is also used when raising the voice to a yell. We never use this register for long when speaking, soon returning to the more comfortable Basal Speech register. In women, it encompasses B_4 to F_5 , and in men from B_3 to F_4 .

¹² A perfect example of impassioned speaking is the speech "I have a dream" given by Dr. Martin Luther King, Jr.

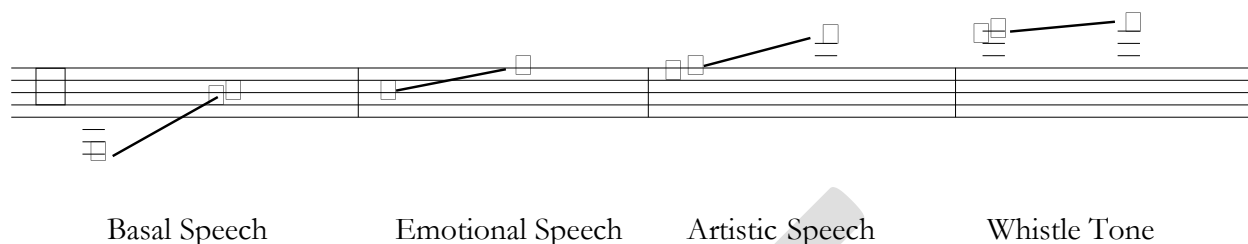
The third and highest speech register is Artistic Speech. We never speak in this register except for comedic effect. This register is used during screaming, in moments of terror or life-threatening situations. The reason for labelling the register Artistic is that people have figured out how to sing in this register, composers like to write in this register, and some audiences like to hear singing in this register. It is also Artistic because, although the voice comes through us, in this range it no longer belongs to us—in fact, when sung correctly, within the singer the voice in this register will suddenly take on a different sound and sensation that is misleading to the singer, needing to be learned and trusted. This will be discussed at length in the chapters on technique. In women, the register begins at $F^{\#}_5$ and continues to D_6 ; in men, the register begins at $F^{\#}_4$ and continues to the top of the natural range.

Two more registers exist that are never used in speech except for comic or mocking effect. The Whistle Tone in women begins at E^b_6 and continues to the extent of the singer's belief that a given note is in her range. Not all women possess a Whistle Tone register. The Falsetto in men overlaps other registers. It can begin as low as B^b_3 and continues to the top of a man's physical limits. The Falsetto in men is highly variable and is often an indicator of voice type. To clarify a misconception held by some in the world of Pop and R&B music, women do not have a Falsetto (and men do not have a Whistle Tone).

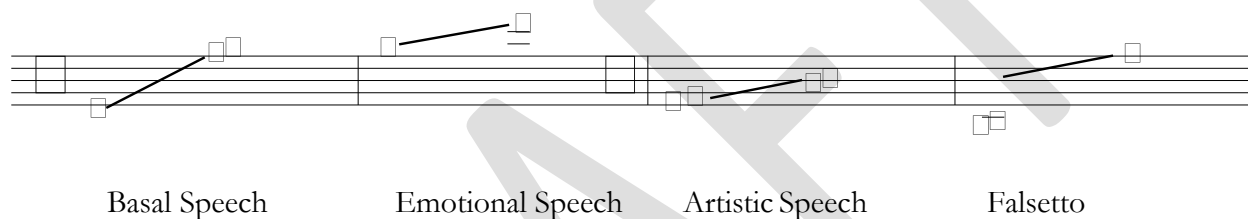
The ranges given for the above registers are a general guideline and will vary somewhat according to voice type. This will be discussed in greater detail in the chapters on training voices.

Since all Belt is speech, and since all Legit is speech, the register events will be referred to by their speech names whether discussing speaking or singing.

Register Events for Women's Voices, Speech Model:



Register Events for Men's Voices, Speech Model:



Composers and song writers have learned to use these registers to their advantage. In popular music, the majority of singing occurs within the range of the Basal Speech register¹³, with occasional excursions to the Emotional Speech register when the emotional content of the words requires a heightening of expression to portray accurately the agitated state of the singer. The most obvious example is the end of Elphaba's *Defying Gravity*, the final pages of which are to be sung entirely in Belt while staying nearly always within the Emotional Speech register. The result is exciting! The Belt is pushed to its traditional upper limits, which is not easy for most singers, lending the perception of it being in an unstable range. The audience has empathy and subconsciously feels the wonderful struggle of the singer as she Belts her way to freedom from those who would bring her down. In Opera, one of the goals of training is to enable seamless transitions between registers

¹³ It is curious that most Pop music singers, whether female or male, sing in about the same range of A₃ to A₄, with the rare excursion lower and the highly impassioned excursion higher. In men, these are the rare voices where the Basal Speech Range remains the same, but the voice is more comfortable in the Range of Emotional and Artistic Speech. I suspect the same may be true of the exceedingly rare voices of the Rossini Tenor and the Countertenor.

and a unification of vocal quality throughout the range; nonetheless, the registers remain true to their origins in speech quality and sensations. A fine example is The Queen of the Night singing *Der Holle Rache* as she navigates incredible coloratura passages almost entirely contained within the Artistic Speech register, sprinkled with the occasional surprise note in Whistle Tone. (Will she hit it? It's like watching NASCAR, secretly hoping for a wreck.) Mozart wanted The Queen to sound other-worldly, so he used the Artistic Speech register, where we never really speak, to give wings to her fury and a sensation to her voice that the audience subconsciously associates with screaming. The better composers and song writers learn about these registers and use them to great effect. The singer would do well to heed the acting clues given by the range of the melody by asking "why this register with these words at this point in the song."

I.9 Aesthetic Choices

One of the great joys of singing is communicating succinctly ideas and emotions through words and music. Words, being symbols, carry exact meanings that can be combined endlessly to communicate directly with the listener. Music, being nothing more than energy in the form of sound waves, creates emotional responses in the brain established by inherited social conditioning¹⁴ that communicates in a general way to the listener. Music carries meaning, words carry ideas, and in the case of a live performance, facial expressions and body language (acting) add another level of understanding. Singers are the bridge between musicians and actors, and must live equally well in both worlds.

¹⁴ Conditioning from the time of birth is the reason a trained musician in the Western European Tradition hears a major scale when one is played. Had that same musician been raised in the tradition of Indian music, with its quarter tones, he would interpret the sudden and new hearing of a major scale as musical nonsense. Thus, in a broad sense, any emotional response we have to music is a product of the music traditions into which we are born and conditioned. This is, again, semiotics, and outside my purview.

Whether a singer is performing live Opera, dancing and singing on the Musical Theatre stage, or recording a Pop Song in a studio (through multiple takes, often to a track that a band had recorded in another location on another day), the goal remains the same: to sing the words with intention based on speech patterns inherent to a given character in a musically artistic manner in the correct style. The need to communicate should live in the heart of every singer in every performance.

The style of singing required is what changes between Opera, Musical Theatre, and Contemporary Commercial Music¹⁵. This is obvious. What is not obvious is there is a technique that can be used to allow the voice *of any singer* to adapt quickly to each of these styles, moving between Belt and Legit while pursuing the speech patterns accepted within each style, composer, and character. Complications do arise: for example, to acquire the artistry, conventions, musicianship, foreign language skills, and acting skills necessary for an authentic Opera performance requires years of careful study. And while a singer may acquire those Opera-related skills, the native vocal quality of a singer may remain subpar to what is necessary for a successful career. Furthermore, a singer may not be inclined to sing in more than one style. The technique itself, enabling the ability to sing healthily in Legit and Belt, anywhere on the Speaking to Singing spectrum, does not guarantee any success in a singer's chosen genre. The technique does encourage a complete vocal artist who has confidence that the voice will be able and ready to meet any challenge within the parameters of its native abilities. It is the best way to sing.

¹⁵ Contemporary Commercial Music, or CCM, is the term adopted by the National Association of Teachers of Singing (NATS) that refers to any music style that is produced for primarily commercial (financial gain) purposes. CCM includes Musical Theatre, Pop, Rock, Jazz, R&B, and any other style that is not Opera or Art Song. In future chapters I will use the term CCM when referring to these genres.