VOCAL VERSATILITY: A PRACTICAL GUIDE FOR CONTEMPORARY CHORAL SINGERS, TEACHERS, CONDUCTORS, AND COMPOSERS

By

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Introduction

Many professional singers balance their careers with both solo and ensemble singing. Though there is significant overlap of skills between these two performance areas, ensemble singing does require unique skill sets. This is particularly true for professional choral singers of new music, an area I have spent a large portion of my time and career as a singer and conductor. What inspired this project was my own experiences—and those of my colleagues and students—in learning the technical challenges within the landscape of modern choral music. In many ways, these vocal "tricks" or tools are learned on the job, often in front of our colleagues in a rehearsal setting. While exciting, this can be a rather nerve-wracking and vulnerable experience. As a voice teacher and conductor, I aim to provide my students with a spectrum of versatile vocal options, allowing them to adapt and play with those options in different settings. I believe that by highlighting and teaching the topics outlined in this project, singers will be better equipped to perform contemporary choral music—and other genres as well—to great success while diversifying their skill set from traditional Western Classical vocal training.

The three topics chosen for this project are based on their frequency of use in contemporary choral music and their accessibility to be taught by most well-trained voice teachers and sung successfully by most well-trained singers. The topics are straight-tone singing, vocal fry, and twang as a vocal timbre.

The methods of my research include the following:

- Compilation and summation of current voice science research on the given topics.
- Examples of the technique(s) found in selected pieces of contemporary choral repertoire, with a focus on notational devices by composers.

- Anecdotal evidence drawn from my extensive personal experiences within these techniques, as a singer, conductor and teacher, having rehearsed, recorded and performed on dozens of choral music pieces that can be considered “new.”
- Vocal exercises that could be used independently or within a voice studio setting to explore and practice the technique(s) at hand.

It should be noted that this is not a paper discussing my own aesthetic preferences or that of others. Rather, it is intended to highlight where contemporary choral music stands from a vocal technique lens, where we might be heading, and how we could get there to achieve higher levels of artistic expression. In addition, the term “contemporary choral music” is used in this context as a reference to modern choral literature that is working to expand upon traditional vocal sound worlds; some refer to this as extended techniques, though that term is not used throughout the document. It is, of course, not all encompassing, as much of new choral literature can be produced and approached with “traditional” vocal technique that does not incorporate these highlighted skills. Also, the scope of this paper is based upon a highly American model of choral literature and vocal technique, as that is the wealth of my experience within in the repertoire.

Choral singing is, of course, a communal event. It is critical, however, to develop these skills as an individual, knowing that some techniques will come easier or harder to others. Learning these in group settings (as is often the case in new music/techniques) is not ideal and could become discouraging for even the best of singers. Furthermore, the power dynamic in a choral setting largely favors the conductor making the decisions for a group of individuals. While it is not the responsibility of a conductor to teach vocal technique to their singers, being knowledgeable about the vocal instrument is important to the success of the ensemble, especially

when dealing with less familiar or entirely new techniques or notation. It is my hope that this paper is a resource for singers, voice teachers, conductors, and composers, all of whom are interacting with these ideas and techniques.

On the topic of Vocal Health:

While many of the topics below are written from the lens of vocal health and sustainability, it is worth noting that individual voices and vocal health needs vary greatly. Conductors and teachers play a role in this, but it is up to the individual vocalist to determine their comfort and endurance within each of these techniques and for those beyond the scope of this paper. Furthermore, it is my belief that policing these techniques and deeming them unsafe or unhealthy without experimentation is a detriment to the evolution of our vocal art, both in expression and composition. There may be significantly less research or anecdotal evidence to explain or support how the voice best functions within these techniques, but one can still explore them without causing lasting damage to one's instrument. The following steps can be useful when exploring anything new within the temperamental, yet resilient instrument that is the voice: proper warmups, cool downs, vocal health and hydration, understanding consistent tendencies of your instrument, etc. It is worth noting that outside of the initial topic, straight-tone, none of these techniques are asked to be sung for long durations.

Topic 1: Straight-Tone Singing

Despite its prominence in vocal music across an array of genres, straight-tone singing is a relatively unclear topic for both singers and teachers. This vocal quality, which possesses minimal vibrato in the vocal instrument, tends to be associated with specific aesthetic preferences and occurs in repertoire ranging from Medieval and Baroque solo singing to choral

music in general to popular commercial music. Yet the factors of producing straight-tone have not been widely taught. As a singer who began formal voice training at a young age, I do not recall being *taught* how to sing straight-tone, but simply was asked to perform with the technique, particularly in choral settings. Straight-tone or minimal vibrato has long been and continues to be a perceived necessity in much chamber choral music. This document will avoid entering the debate around individual aesthetic preferences of this particular sound, but rather focuses on the following questions, in an effort to elevate the way we consider and teach straight-tone singing: What science currently exists to explain the production of straight-tone singing? How do we talk about straight-tone singing in the voice community and in the voice studio and what is the impact? Is there a stigma around the healthiness and sustainability of straight-tone singing that prevents its instruction? And finally, what vocal exercises or repertoire are useful in teaching straight-tone vs. vibrant singing and how can teachers of singing incorporate those exercises into studio voice lessons?

Vibrato vs. Straight-tone

To begin, here is a brief overview of the terminology and general stylistic preferences for vibrato vs. straight-tone singing. Vibrato is a naturally occurring, audible pulsing or tremor in the voice. A normal vibrato rate (meaning how many oscillations per second) is between 5-7 hertz, with a normal vibrato extent (meaning how wide of a pitch variation from the central pitch being sung) is 50 cents, or approximately one quarter tone.[1] It should be noted that the perception of audible vibrato is not always naturally occurring. Younger singers in particular often manipulate various muscles to create the sound of vibrato "shaking" without the essential balance of air flow

[1] Kerrie Obert, "Vibrato: Theories and Research." (lecture, presented online, date unknown).

and muscular coordination that would allow vibrato to occur naturally. This should be recognized by a teacher as early as possible to avoid long-term habit building of false vibrato. The teacher should also remind the student that the occurrence of vibrato is not a strict signifier of vocal health or beauty. Vibrato is used frequently in nearly all vocal styles and allows for more distinct individual vocal timbres and characteristics to come through. Vibrato is used throughout: opera literature, Western classical art song, musical theater (particularly in Golden Age musical theatre), and is strategically employed in pop, contemporary commercial music, and jazz.

Straight-tone (also frequently referred to as *nonvibrato*) is the perceived reduction of these oscillations, minimizing the pulsing to such a degree that the sound presents itself to have seemingly no vibrato or oscillations at all. This is not truly the case, as the human voice will always have degrees of rate and extent variance. However, the perception of straight-tone is a reduction of extent to as minimal a pitch variation as possible.[2] Straight-tone as a technique is frequently heard in early music (Medieval and Baroque literature), as a stylistic and expressive device in some Western classical art song and even opera, and frequently in choral/ensemble singing (to encourage vowel harmonization and unity amongst singers), musical theatre (particularly in contemporary music theatre/belting repertoire), and pop, commercial music, and jazz.

[2] Ingo Titze in John Nix, "Shaken, Not Stirred: Practical Ideas for Addressing Vibrato and Nonvibrato Singing in the Studio and the Choral Rehearsal," *Journal of Singing* 70, no. 4 (March/April 2014): 413.

The Stigma of Straight-Tone

For years in training the voice through a classical, largely Italianate school of training, vibrato in the voice has been bound by its inherent connection to a free body and coordinated vocal function. Therefore, an overly rigid binary has emerged that a voice with vibrato is ideal, and a voice without it implies a roadblock or vocal fault and something to be regulated. Three of the more popular vocal pedagogy texts among voice programs within American universities discuss this preference toward vibrato.

Richard Miller includes a section in the popular text *The Structure of Singing* titled "Eliminating Straight-Tone Intrusion," implying the "fault" that is tied to straight-tone sounds. "The Singer who first produces a straight-tone onset, followed by vibrato does not arrive at free (efficient) muscle synergism until that moment at which vibrato makes its appearance."[3]

Clifton Ware writes, "According to principles of efficient vocal production, the natural vibrato pattern occurs only when the right conditions result in a well-coordinated singing voice."[4] Ware also includes a common position that "straight-tone singing should be limited to special effects in solo and choral singing…and excessive straight-tone singing can retard the vocal development of young singers."[5] These imply the common position that straight-tone is related to inefficiencies in the body/instrument.[6]

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[3] Richard Miller, *The Structure of Singing: System and Art in Vocal Technique* (Boston: Schirmer Cengage Learning, 1996), 187.

[4] Clifton Ware, *Basics of Vocal Pedagogy: The Foundations and Process of Singing* (Boston: McGraw-Hill, 1998), 182.

[5] Ibid.

[6] This term "body/instrument" is my preferred method of expressing the unique nature of the singer's physical body which is also used as a vocal instrument. This is similar to the newly popularized "body/mind," which implies the inherent connectivity between one's body and one's mind.

In a text dedicated to the diagnosis and correction of vocal faults, James McKinney includes that a lack of vibrato is an important indicator of vocal problems. "Laryngeal tension acts as an inhibitor of normal vibrato."[7] McKinney attributes this to hyperfunctional vocal production, or an over-working of the breath and/or musculature of singing. McKinney, in his section on vibrato, includes a quote of John Large, discussing the "pendulum-like movements of the intrinsic laryngeal musculature." He goes on to say that "these movements are said to prevent fatigue at the laryngeal level; in other words, the musculature is alternatively working and resting in vibrato. In the production of straight-tone, the musculature is constantly working."[8]

Singers and vocal pedagogues have these various theories that straight-tone singing is caused by under-energized breath, or possibly also caused by overworking the breath or muscles of singing, and the use of straight-tone could stunt vocal development. This is not to say that these positions are incorrect—certainly vocal faults can exist that produce undesirable or inefficient vocal sounds, perhaps including *nonvibrato* singing. Yet, it is striking that within these texts straight-tone is not regarded as a technique, but rather as an undesirable problem. This prompts me to ask: is it necessary to know how to sing with a free-released, natural vibrato first to then implement ways of avoiding the spin strategically and allow for efficient straight-tone singing? Furthermore, if it is truly inefficient and unhealthy, how have singers of varying genres sustained lengthy careers producing straight-tone sounds? These questions largely remain unanswered, but we can examine what science does exist on the topic.

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[7] James C. McKinney, *The Diagnosis and Correction of Vocal Faults: A Manual for Teachers of Singing and for Choir Directors* (Long Grove, IL: Waveland Press, 1994), 89.

[8] Ibid., 197.

What Does the Science Say?

While ambiguity remains around the neurological and physiological occurrences in straight-tone singing, we do have some measured research focused on vibrato that in turn can aid theories of how straight-tone technique is produced. It is best to break the results of this research into the following categories: neurology, breath, and musculature.

Neurology

Voice science research dating back to the 1960s informs the concept that vibrato is both neurological and muscular. Rebecca Sherburn-Bly synthesizes some of this research in her 2007 article in the *Choral Journal* stating:

> A neurological impulse travels along the vagus nerve, the nerve that serves the laryngeal area and corresponds to each individual's unique vibrato rate. This pulsating, two-part nerve innervates the laryngeal area and contracts the cryco-thyroid muscle, one of our primary pitch changing muscles. If the pulsating of the vagus nerve was viewed during singing, one would see the same rate of vibrato reflected in the laryngeal nerve as one would hear in the sound.[9]

Because the production of vibrato begins with a neurological impulse tied to vocal production, "that neurological aspect of vibrato cannot be stopped," Sherburn-Bly says, "but the muscular part can."[10] Therefore, there is a simple but significant theory that a thought process alone *may* be enough to limit vibrato in many singers. Perhaps it is as simple as, "think 'no vibrato,'" in order to achieve it.

[9] Rebecca Sherburn-Bly, "Straight-tone in the Choral Arts: A Simple Solution," *Choral Journal* 47, no. 8 (February 2007): 62.

[10] Ibid., 65.

Breath

We also know that there is a relationship between air flow and the production of vibrato. Voice researchers Iwata and Large found that air flow rates are approximately 10% higher for vibrato tones than for *nonvibrato* tones.[11] There is speculation as to why the airflow is reduced in straight-tones. In their 1971 study, Iwata and Large were led to believe that "the slower air flow rate in straight-tone singing resulted from glottal resistance caused by the contracting laryngeal musculature needed to inhibit vibrato."[12] This leads me to consider that if the airflow were not reduced by the approximate 10% associated with vibrato, and the glottal resistance was simultaneously increased to avoid the natural neurological impulse of vibrato, this would create a pressed sound, or become physically uncomfortable for the singer. The singer would be responsible to consciously reduce airflow and measure this glottal resistance through sensory awareness, a challenging but feasible process to teach.

Musculature

This understanding of air flow leads to the inevitable relationship between the singer's breath and the action of their intrinsic muscles of the larynx. Shipp, Doherty, and Haglund explain that the intrinsic muscle most attributed to vibrato occurs with oscillations in the cricothyroid. The study that revealed such information involved a subject singing with a hooked-wire electrode to the cricothyroid area of the throat, singing a consistent vowel with normal vibrato, then alternating between straight-tone and exaggerated vibrato extent. The researchers

[11] John Nix, 412.

[12] Steven Todd Weber, "An Investigation of Intensity Differences Between Vibrato and Straight-tone Singing" (DMA diss., Arizona State University, 1992), 44, ProQuest Dissertations & Theses Global.

found that "in the lower portion of the vibratory cycle the cricothyroid muscle increased its activity, and during the highest frequency segments of vibrato, the muscle showed marked reduction."[13] The symbiotic relationship of these elements—neurology, breath, and musculature—is concisely described by these same researchers, stating, "The muscle oscillations manifest themselves when structural aspects of the vocal folds, in concert with the breath mechanism, are appropriately balanced and the neuromuscular system is mature enough to produce regular contractions of select muscles."[14] In other words, coordination amongst these elements is key, and age and development are factors in the ability to coordinate them.

What Do We Do with This Information?

With every bit of voice science research, the voice community forms stronger ideas of the complex relationships that exist within the vocal instrument. This information surrounding vibrato production may guide us to better understand its dialectic relationship to straight-tone singing. Yet, the information is largely still theoretical and there are not ample pedagogical tools that would allow a move from straight-tone "the fault" to straight-tone "the technique." Enter the role of the voice teacher. It is with this information that we can construct our individual approaches toward encouraging healthy, sustainable straight-tone singing within choral music and beyond. With this added vocal quality, our students will become more versatile in their vocal colors and expressivity which may open them up to new avenues of repertoire specialization or careers as professional choral performers.

[13] Steven Todd Weber, 42.

[14] John Nix, 412.

The Words We Use

In the process of voice teaching, the words we choose are incredibly important. One of the catalysts of this research was hearing the confusion amongst my students and colleagues over what straight-tone production is or "should" be. Some students have even been cautioned to never sing with straight-tone at the risk of vocal damage. I find this to be an exaggeration and an overly cautious approach. In a recent conversation with a colleague, the teacher compared straight-tone singing to power lifting, saying, "it may not be the most natural thing to do with your body/instrument, but with proper training you can do so effectively and repeatedly without injuring yourself."[15] Even the term on which this chapter is titled is worthy of ridicule. Should singers refer to it as straight-tone? Perhaps, *nonvibrato*? Something else entirely? Sherburn-Bly offers other possible solutions such as "early tone," "young sound," or "antique style," before landing on her preferred title of "simple tone."[16] I recognize the place for this alternative branding; as has been discussed already, numerous sources provide evidence that straight-tone never truly eliminates oscillations, but merely reduces the extent, creating a simple sound for the listener[17] Perhaps "simple tone" is the more marketable name for this less complex aural experience. I believe by incorporating flexible language such as this and adapting language to suit student perceptions in singing without vibrato, we begin to shift to more intentional teaching and singing. This move in terminology can also be a critical step in reducing the dominance of aesthetic bias in teaching our singers, particularly young singers. Teaching to a specific sonic image rather than sensation-based experiences can become troublesome for the student. If

[15] Kateri Gormley, personal communication, March 29th, 2021.

[16] Rebecca Sherburn-Bly, 61.

[17] Ingo Titze in John Nix, 413.

teachers of singing continue to express—without context—that vibrato is the byproduct of efficient singing, and straight-tone the byproduct of inefficiencies, students will continue to search for ways to integrate vibrato into their sound at whatever cost and view straight-tone as problematic. "Chasing vibrato," as I refer to it, can create additional entanglements within the instrument—including tension of the articulators, over-pressurization of breath, tensions of the laryngeal depressor muscles, and more—making it harder to achieve an honest, dynamic spin to the voice and restricting comfort in straight-tone.

Teach the *Individual* and Let the Individual Teach Us

It should be noted that vibrato rate is different in each body, and as such, straight-tone experiences will be unique to the individual.[18] Therefore, it is critical to teach the individual student, recognizing their distinct vocal journey, and to have multiple approaches in playing with straight-tone (or other techniques for that matter). Despite my attempts at developing a research-based understanding of straight-tone singing, I recognize the fault in relying solely on the science (especially when it is incomplete, such as this case). I value the heuristic approach to teaching, as described by voice teacher Kari Ragan. She explains, "A heuristic teaching method is one that encourages students toward experimentation and guided discovery. It empowers students to explore through an individual learning style…This leads the student to better self-efficacy and autonomy."[19] If we embark on this uncertain technique with curiosity and play rather than expectations, we may learn more about straight-tone singing, reduce the stigma around it, and encourage healthy uses of it in multiple singing styles.

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[18] Kerry Obert, lecture.

[19] Kari Ragan, *A Systematic Approach to Voice: The Art of Studio Application* (San Diego: Plural Publishing, 2020), 4.

Concepts to Play With

A playground of vocal exploration benefits from pedagogic understanding as a jumping off point. Through this research, I have encountered several suggestions and exercises for increased comfort in straight-tone. I have also developed some ideas based on my own experiences as a singer and teacher. Here is a synthesis of these specific ideas.

Achieving Low Airflow

As has been articulated, straight-tone is produced by using lower airflow than in vibrato tones. One way to practice this, as suggested by singer and teacher Danya Katok, is to imagine fogging up a window.[20] She instructs the student to raise their palm to their mouth and exhale, as if fogging up a window. Then, the student is to try again and make the exhalation silent; if the student can hear themselves exhaling, the airflow is too fast. Next, move from this silent exhalation to a voiced, spoken "ah," aiming to move as seamlessly from the silent exhalation to the voiced sound. Katok notes an important distinction that straight-tone is not the goal of this exercise but may be a welcomed byproduct: "If flow phonation is achieved with a truly low rate of airflow, vibrato will be minimal."[21]

Finding Our Flow

It has been noted that straight-tone sound is produced not just by a low air flow rate but by utilizing low subglottal pressure, or the build-up of air pressure that occurs beneath the vocal

[20] Danya Katok, "The Versatile Singer: A Guide to Vibrato and Straight-tone" (DMA diss., The City University of New York, 2016), 58, ProQuest Dissertations & Theses Global.

[21] Ibid.

folds.[22] To understand what the differences in subglottal pressure feel like in the body, I encourage students to play with the following three onset exercises and the corresponding types of phonation that tend to result from them.[23] The three onsets are aspirate, glottal, and balanced (or what some refer to as "coordinated"). Likewise, there are three types of phonation that tend to result from these different onsets, which are "breathy phonation," "pressed phonation," and "flow phonation," respectively.[24] These exercises work well in achieving the three onsets/phonation types through a spoken quality.

For aspirate, instruct the student to softly speak in an elongated fashion the word "Hi," with an audible, aspirate 'h' at the onset and gentle and long vowel. This will create a slight air leak at the beginning of the word because of the low subglottic pressure in the body which is not enough to bring the vocal folds together on pitch. The student can then play with shortening the aspirate 'h' and work to maintain the feeling of low pressure in the voice.

For the glottal onset and "pressed phonation" (which is not intended to be used abundantly due to its muscular intensity and potential for vocal fatigue), instruct the student to articulate the phrase "Uh-oh," as if a parent informing a young child of a mistake, lengthening the second syllable "oh." Because there is no air flow at the beginning of the exercise, the sudden articulation of the pitched "uh" creates a glottal stroke onset and the second syllable "oh" will maintain its highly pressurized, "pressed" sound. To further feel the build-up of subglottal pressure, pause slightly between the articulation of the two syllables, as in "Uh (with a glottal stroke) *pause, holding the sensation of high pressure in the body before releasing

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[22] Ibid., 57.

[23] The three onset exercises were first introduced to me by Kerrie Obert at a Level One Estill Voice Training. They have been slightly altered through my own teaching practice throughout the years.

[24] Danya Katok, 20-2.

to*…ohhhhhhh." The resulting "oh" will likely be quite strong, perhaps even brassy sounding or pressed.

The final exercise is meant to coordinate the subglottal pressure and create a balance of breath and muscle, or a state of "flow phonation." For this, instruct the student to imagine they are seeing an adorable little baby, or puppy, or other cute thing, and utter the phrase "ohhhh, how cute." The goal here is for the initial "oh" onset to be neither breathy nor pressed, but rather emerging with a balance of breath and muscle. This is a coordination that the majority of singing should be built around.

Even within straight-tone singing, which requires low(er) airflow and low(er) subglottic pressure, the initial balance of the onset should feel as if it originates within this third state of flow phonation. This will achieve balance within the body/instrument and create possibilities for vibrato *or* straight-tone, depending on the intended vocal style. It should be noted that straight-tone or vibrato can take place in any of these three phonation types, but flow phonation tends to create the most flexibility and comfort in the voice long term. As Katok notes, "in general, flow phonation made up of low subglottal pressure and low airflow will have the least vibrato (straight-tone) and flow phonation made up of high subglottal pressure and high airflow will have the greatest vibrato (vibrant, operatic-type singing).[25] It is important to feel like these elements of air flow, subglottal pressure, and onset are perceived on a spectrum rather than within strict compartments.

[25] Ibid., 55.

Sliding

Exercises that incorporate a continuous slide of pitch are excellent for accessing *nonvibrato* sounds. Katok notes that "a slide is, by definition, free of vibrato since it does not stay on any one pitch long enough for it to oscillate."[26] The following examples are useful exercises to incorporate straight-tone sliding.[27]

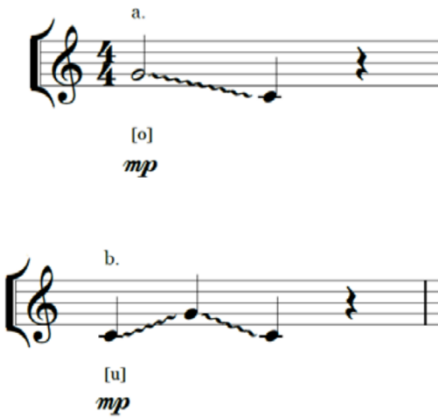


Figure 1.1. Sliding exercises for straight-tone

Encourage the singer to slide the pitch consistently throughout, avoiding a sustained initial or final pitch, which may allow vibrato to naturally creep in. Once students display comfort with avoiding spin within these exercises, I encourage "next level" practicing by lengthening the middle pitch in example b., testing how vibrato-less it can be while sustaining for a couple of beats. Katok offers various other exercises in her dissertation that are useful progressions for students training this technique.[28]

[26] Ibid., 61.

[27] Ibid.

[28] Ibid., 65-6.

Repertoire Ideas

Students should explore straight-tone singing on their own and in their lessons as opposed to strictly in an ensemble setting when so many other variables affect one's ability to consider their technique. Repertoire may be the best way to play with *nonvibrant* sounds for a singer looking to enhance this skill. This could easily be incorporated into studio lessons. For a student training primarily in classical repertoire, offering folk song melodies or selections from the Great American Songbook repertoire are useful ways to encourage easy vocal production. Repertoire with moving melodies and few sustained pitches is also a good way to continue air flow without the ability for pitch oscillation on those moving notes. It has also been recommended to play with hymn melodies or Gregorian chant, for these same reasons.[29] The idea of incorporating straight vocal sounds through repertoire is not to "perform" these works, or to show off the size and optimal resonance of one's instrument. Rather, it is to encourage simplicity of tone, consistency of air flow, and practice in the humility required to sing straight-tone. In my experience, straight-tone singing by oneself can sometimes feel underwhelming when compared to the acoustic and physical experience of its vibrant counterpart. Still, the skill is worthy to have in one's arsenal of expressive and collaborative capabilities.

Straight-Tone Conclusion

Straight-tone singing is an important stylistic technique for singers and teachers to have command over. To the extent the current research has provided, we must understand the information of the neurological and physiological processes involved in straight-tone and vibrant singing so that we are making informed choices beyond long-standing judgments and stigmas

[29] Ibid., 67.

that surround the technique. It is, in fact, a technique, not strictly a vocal fault, and through the research, exercises, and images outlined throughout this project, teachers can begin to gain comfort in addressing it in studio lessons. Students are asked to sing with minimal vibrato in many situations, particularly in choral contexts, and therefore voice teachers are responsible for guiding their experience to finding comfortable means of production. It is a process—like much in singing—that is unique to each individual and inconclusive in our understanding of how we do what we do. By accepting this ambiguity with curiosity, it is my hope that more research will be done to solidify our approach to straight-tone singing.

Topic 2: Vocal Fry

Vocal fry is a term and technique that goes by many aliases. In addition to the classification "vocal fry" are glottal fry, pulse register, the German *Strohbass*, or even more casual terminology such as "creaky voice," "monster voice," or (to use a stereotyping explanation) "valley-girl speech." All of these titles refer to the same sound: a low-frequency vocal production, characterized by its popping or rattling quality. Functionally, vocal fry is in a singer's lowest register and is "achieved with greater laxness of the vocal folds, and increased contact of the tissue."[30] There is low lung pressure and low airflow required, however there is complete adduction at the top of the vocal folds and very little thyroarytenoid activity. Due to the lack of muscle engagement required, and because vocal folds must be in a relaxed position to produce this mode of singing, vocal fry is often used in therapeutic settings to "off-load" vocal tension, for cool-downs, and to improve lower notes in chest register.[31] That said, it is easy for hyper-functional singers to begin exploring this therapeutic vocal fry by producing a tense vocal

[30] Kari Ragan, *A Systematic Approach to Voice: The Art of Studio Application* (San Diego: Plural Publishing, 2020), 106.

[31] Ibid.

fry, meaning over-engaging the thyroarytenoid muscle and/or false vocal folds and creating too much pitch within the preferred lax structure of the vocal folds. This will be evident by a lack of "pops" in the fry, or inconsistent sense of the sound crackling, as well as an increase in audible pitch. More will be explained in the exercises section of this topic on how to relieve this tension to produce a more relaxed vocal fry.

Vocal fry is the topic of much conversation regarding speech habits. The most common tendency is for the speaker to have a rather under-energized quality to their speech, and to trail their phrases off at the end to a low-register, low-frequency fry. This is, in my observation, something incredibly common among podcast hosts, perhaps due to the nature of the recording process and intimate proximity of the microphone placement. If a person does not *need* to energize the sound through the ends of spoken phrases, they may tend to drop them into vocal fry. While this may not be the most engaging, dynamic, or modulatory mode of speech, it is unlikely to be causing any vocal harm to the individual. The regularity of vocal fry's use as a therapeutic voice exercise and the low muscle engagement required to produce it indicate that it would not cause serious harm on a person's voice, which are more commonly attributed to vocal abuses and hyper-functionality. However, if a student's singing is consistently defined by a lack of air pressure, air flow, vocal fold adduction, or overall hypo-functionality to produce their desired sound, *and* that student is also a chronic vocal fry user in speech, it may be fruitful to encourage the student to be conscious of speech patterns and engage their speech with greater airflow, modulating pitch, and physical energy in hopes of translating that to their singing.

The application of vocal fry in traditional, classical voice training has increased greatly in the late 20th and early 21st centuries. This may be attributed to the increase in voice science research that indicate its vocal health benefits, as well as vocal acoustics measurement software

such as Voce Vista and others that allow individuals to measure and compute their acoustic output. Vocal fry is frequently used in these acoustic exercises to find a baseline of a singer's formant tuning and vowel clarity. The technique of vocal fry is also a successful means to connect registers of the voice without over-tensing the larynx.[32]

Vocal Fry in Choral Repertoire:

Due to the stark timbral contrast between traditionally pitched sound and vocal fry, there is great expressive potential when utilizing the technique. There are some tendencies I have found with the inclusion of vocal fry in choral contexts. First, there is not a unanimous form of music notation for vocal fry within a score; notation will vary from composer to composer. In every instance I have come across, editorial remarks are needed with some version of the words "vocal fry" written above the written pitch. Occasionally there are more artistic and dramatic means by which composers notate vocal fry which will be outlined in the examples to follow.

Because fry is intended to be relatively unpitched–or at least with less discernible pitch–the common "X-note head" notation is often utilized, as seen below.

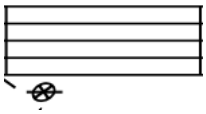


Figure 2.1. X-notehead notation extracted from Maggio's *Man Up / Man Down*

Additionally, a vowel–if not complete words–often accompanies the notated vocal fry, as fry can occur with any combination of vowel formation. Conductors and singers benefit greatly from this level of notation specificity and encourage composers to continue the exploration of vowel

[32] John Nix et al, "Application of Vocal Fry to the Training of Singers," *Journal of Singing* 62, no. 1 (September/October 2005): 56-7.

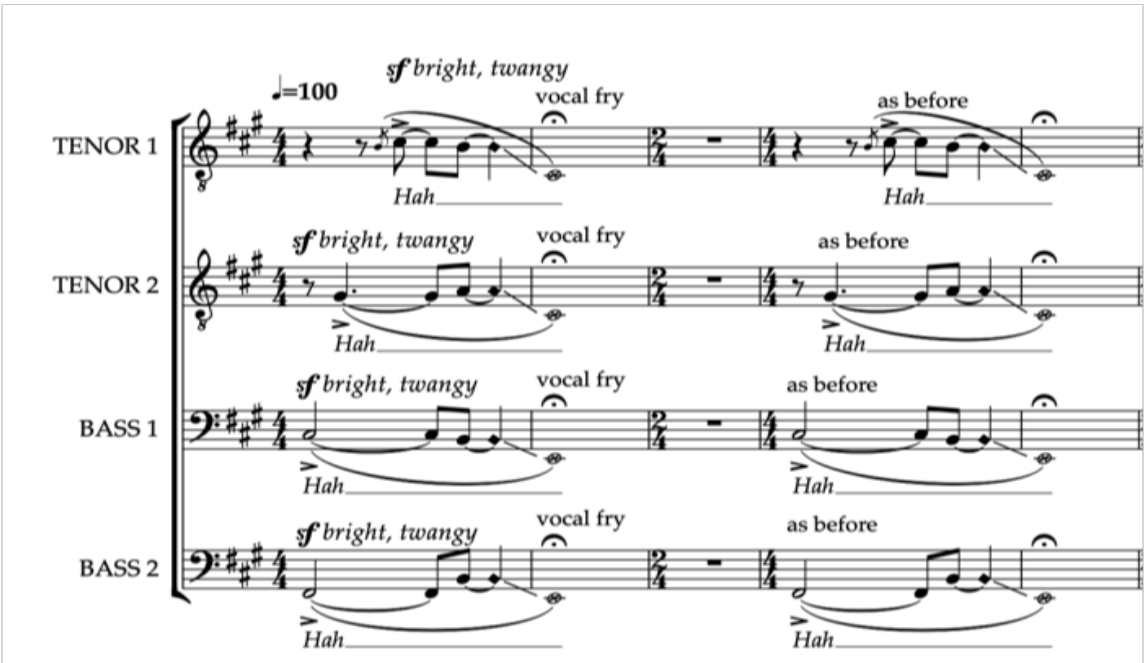
specificity when composing moments of vocal fry. Furthermore, the clarity provided by including symbols from the International Phonetic Alphabet (IPA) is a great resource for singers and conductors performing this music, leaving little to be misinterpreted. If so desired, inclusion of complete words can be useful, knowing that the clarity of text is not the intended goal within this vocal effect, but rather the dramatic vocal color contrast that fry offers.

It has been observed that most occurrences of vocal fry in choral repertoire occur in only some vocal parts at a given time, rather than a choir full of vocal fry sounds (for obvious reasons). Clearly this technique is being utilized as a dramatic effect, creating an additional, sometimes almost unidentifiable color and mood. Many of the examples outlined below occur within moments of intensity, discomfort, or eeriness.

There is some confusion over how to compose dynamics within a vocal fry. It was found occasionally that composers included dynamic shifts with *crescendi* or *diminuendi*. While volume changes may be able to be achieved with some alterations to the freedom of the vocal fry by slightly engaging the thyroarytenoid muscle (thus creating more pitch), the only way to create the change in amplitude would be to adjust the opening of the singer's mouth. The vocal fry through a more closed mouth position and/or with a more closed vowel like [u] or [i] can reduce amplitude while a more open mouth position with an [a] vowel shape can increase the amplitude. It should be noted that these changes are subtle at best, and that composers should not expect significant shifts without including some pitch to the intended fry.

Specific Examples within Repertoire:

"Skate Park Guy 3," mvt. 7 of *Man Up/Man Down* by Robert Maggio (2021)



- This piece is scored for TTBB and the vocal fry occurs in all voices in measures 2 and 5, as well as in the Bass 1 and Bass 2 parts in the final measure of the movement.
- The editorial marking for this sound is simply "vocal fry," using an x-note head notation. It is notated simply and is discernible to anyone familiar with the technique.
- This example is interesting in its approach, moving from a fully sung quality marked "bright, twangy," to a sliding descent in pitch into the low fry register. This is the approach in both measures 2 and 5. *Man Up/Man Down* is a choral work exploring the question "what does it mean to be a man in 21st century America?" The 11 movements of the work explore different positionalities within that prompting question. The anchor movements are titled "Skate Park Guy 1-4" and explore a narrative from author and social sciences professor Michael Kimmel about the challenges young boys face of fitting in while attempting to maintain morality. In the context of this movement, "Skate Park

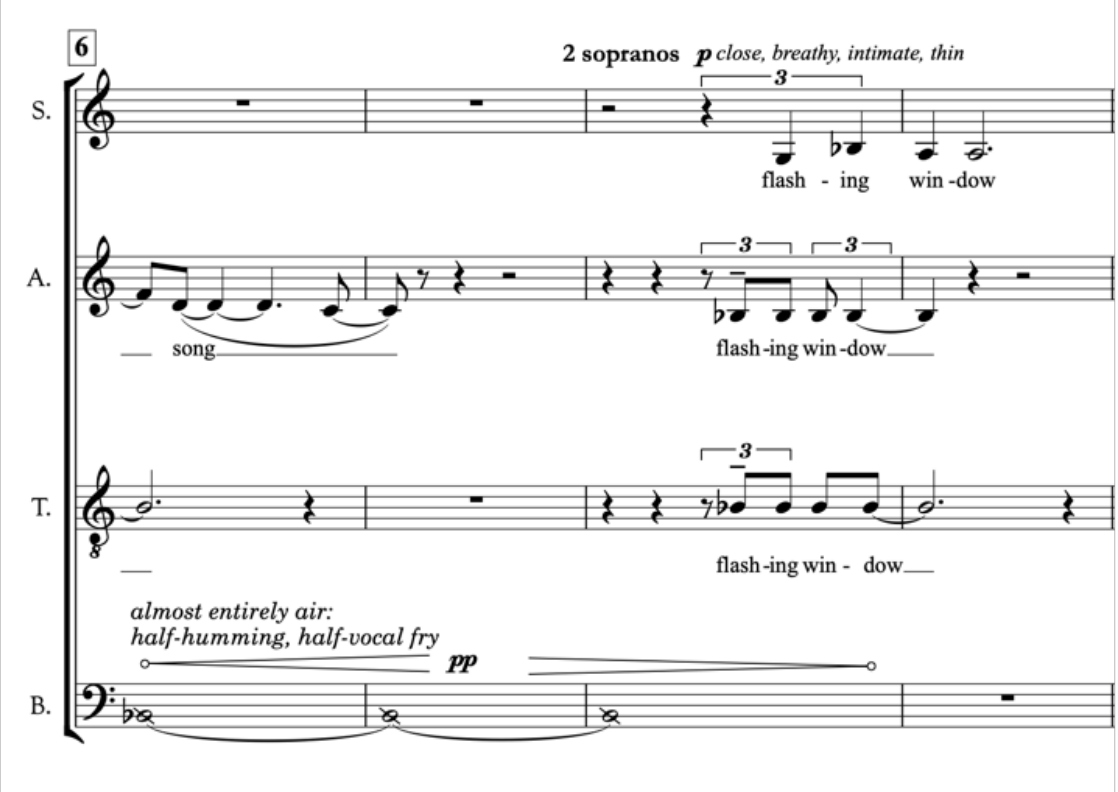
Guy 3," the vocal fry is meant to signify a sinister influence being put upon the narrative's protagonist. The bright, twangy sound represents a harsh, menacing, almost stabbing approach to open the movement, and the slide to vocal fry signifies the inevitable corruption of a young, impressionable boy.

- I find this instance of vocal fry to be one of the easiest to achieve and is very "singer friendly." The notation and dramatic intent are both very clear. From a technical standpoint, it is often preferred to approach vocal fry from pitch, particularly when able to descend to that fry from a downward sliding pitch.

Practice:

Vocal fry is a sound many children play with to imitate the sound of a monster, or a creaking door. Using those images, you may attempt vocal fry by playing with the low, airy sounds trying to achieve many "bubbles" in the sound and little to no pitch, all while maintaining a free, loose feeling throat. Sometimes fry is easiest to achieve from a downward slide on a lightly pitched sigh, moving from the light sound into the lowest range until there is no more discernible pitch and fry naturally comes in. It is good to move from pitch to unpitched fry to keep a laxness to the vocal folds. (Moving from an unpitched sighing breath to a pitched vocal fry tends to create a feeling of tension or overwork, defeating the purpose of the exercise.) Then, practice doing this sighing gesture on a variety of vowels, as some can be easier to achieve than others: [i] [e] [a] [o] [u]. Finally, experiment with approaching the sung element preceding the fry in a variety of dynamics and timbres. Ask yourself "Can I achieve this when I begin *forte* and bright before the fry? What about *piano* and dark?" Exploring these options will allow the singer to find what tendencies lead to the most ease in their vocal fry and allow enough flexibility to achieve what Maggio is requesting in this piece.

“Burning TV Song,” mvt. 3 of *Privilege* by Ted Hearne (2009)



- The vocal fry occurs in the Bass voices in measures 6-8 and 11-13.
- The editorial marking for this sound is worth noting: “almost entirely air: half-humming, half vocal fry.” This already indicates that it will not be performed as a “true” vocal fry with the incorporation of more discernible pitch. As such, Hearne does not utilize the “X-note head” notation, but a hybrid of it with a single slash on a B-flat. Dynamics are also incorporated, moving from what appears to be silence with a *crescendo* to *pianissimo* and then a *diminuendo* to silence again over the three measures.
- In this movement, the vocal fry seems to imitate the radiant hum and auditory crackling from static emanating from an old television set. The text of the movement, written by Hearne themself, creates a feeling of longing from an outside observer looking into homes at night, with the shifting lights of television programs flashing through the

windows. There is a sense of nostalgia combined with unsettledness throughout. The mixed-with-pitch vocal fry feels like it adds to this unsettled atmosphere.

- Mixing pitch with vocal fry, or as Hearne described it, "half-humming," makes the technique a bit trickier and something conductors and singers must experiment with. From my experience performing this piece with the composer in the room, the precision of the pitch is less critical than the effect of the cracking from the airy fry. Emerging from silence can be difficult as well, so practicing a subtle release or "leak" of air, like a light sigh, can help smooth out the onset.
- To achieve this particular effect, it may be worth experimenting with mouth shape. As Hearne requested with his "half-humming" marking, the desired effect is best achieved with a closed mouth position, adding a sense of crackled fry into the low pitch. By closing the mouth, the pitch will be easier to achieve but the effect may be lost due to the low amplitude of the sound. Conductors may benefit from experimenting with half of the Bass section humming and while the other half does an unpitched vocal fry, creating a bit more balance between the two sounds.

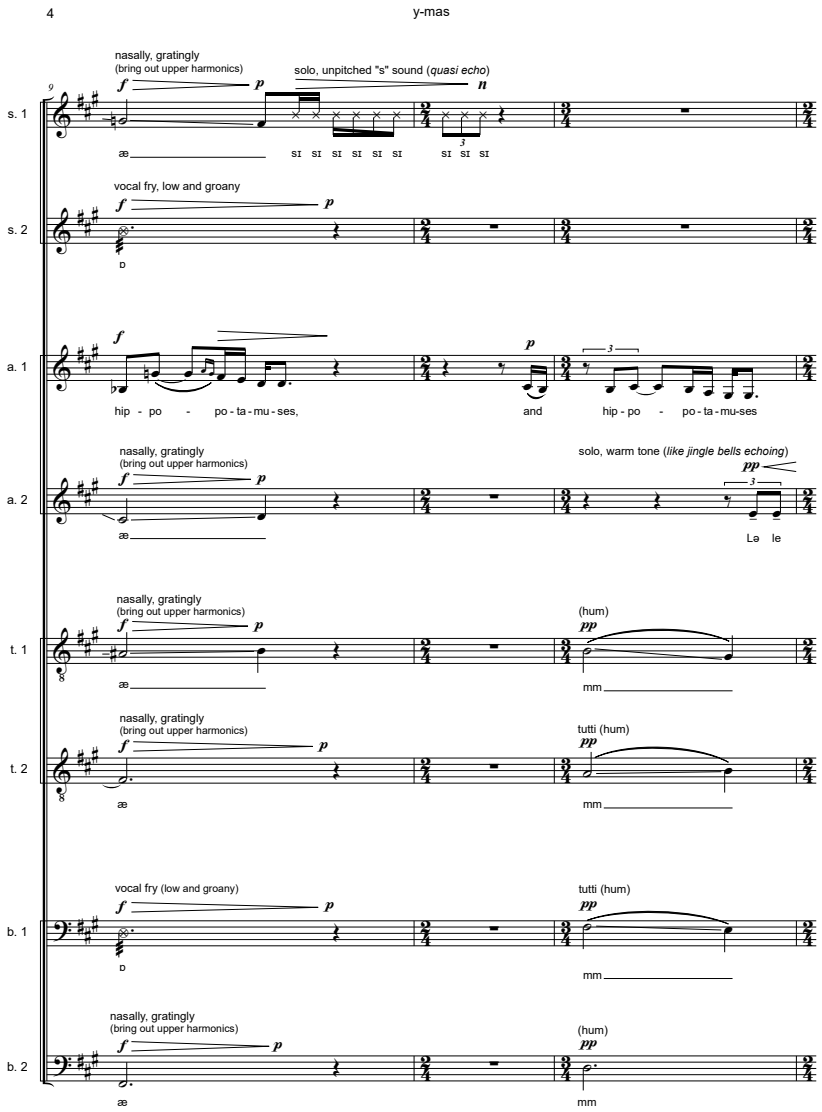
Practice:

The added element of pitch to fry can be tricky to find comfort with. I recommend practicing this on an exercise I call "Vocal Fry *Messa di Voce*." Like a traditional *messa di voce* where the singer explores dynamic shifts with a *crescendo* and *diminuendo,* the singer will attempt to move through a sequence of pitch → fry → pitch, and the reverse: fry → pitch → fry. This can be achieved by choosing a comfortable pitch in the lower-middle range to sing lightly. I recommend beginning with an [i] vowel, though each singer will have their preference. Move from singing the pitched vowel at a soft dynamic and transition that sound to vocal fry, moving

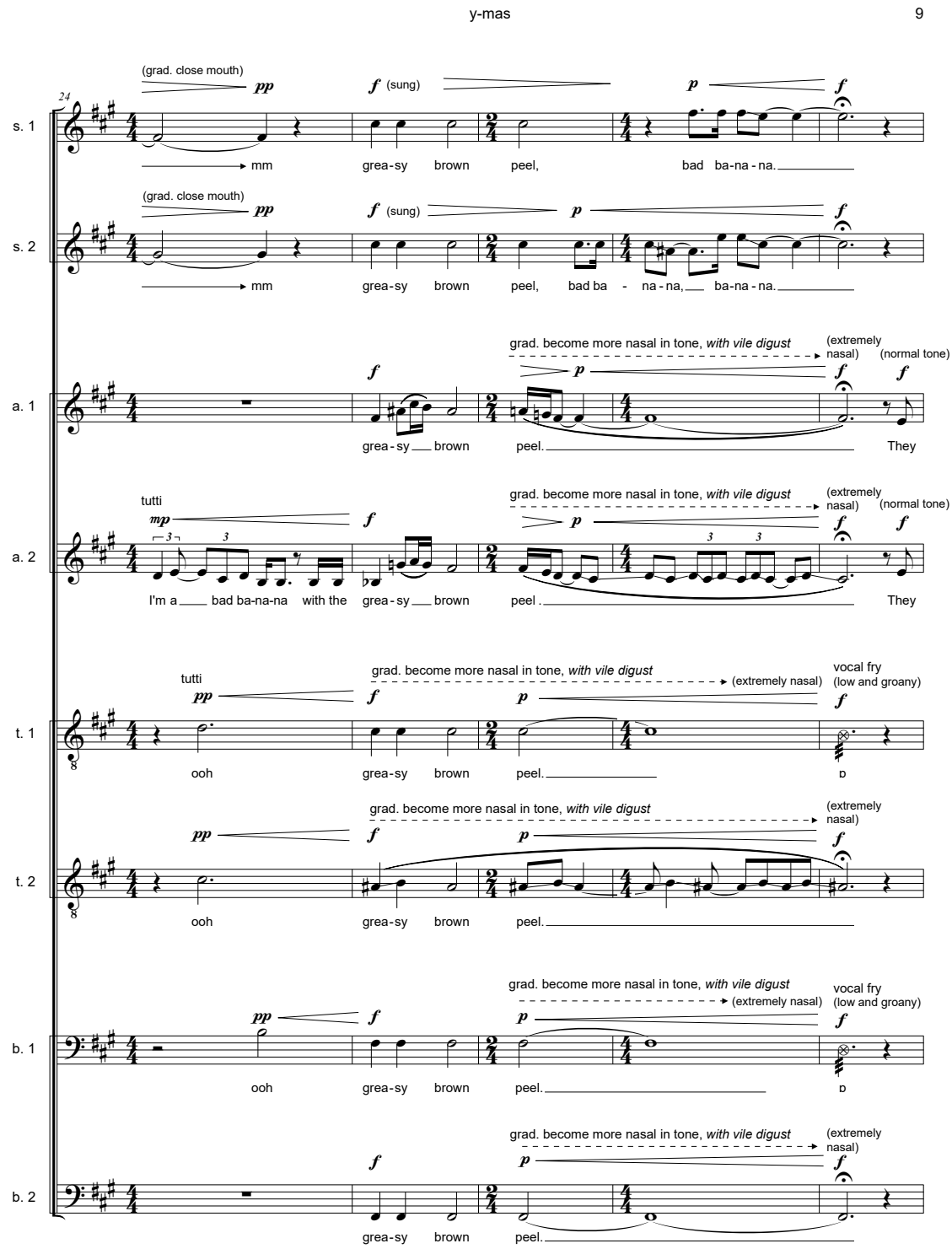
slowly back and forth between the two different sounds. After this has been achieved, attempt moving from fry first, and then moving to that lightly sung pitch and back again to fry. This is a good exercise of vocal flexibility, as the vocal folds cannot be overly tense and still achieve the crackling fry. Then, with the goal of adding more consistent pitch into the vocal fry, attempt the pitch → fry → pitch progression while blending the two sounds, incorporating some of the sung pitch within the crackling sensation of the vocal fry, all while trying to maintain most of the lax feeling in the throat (though acknowledging that some amount of adduction will likely be felt).

"y-mas" by Nina Shekar (2021)

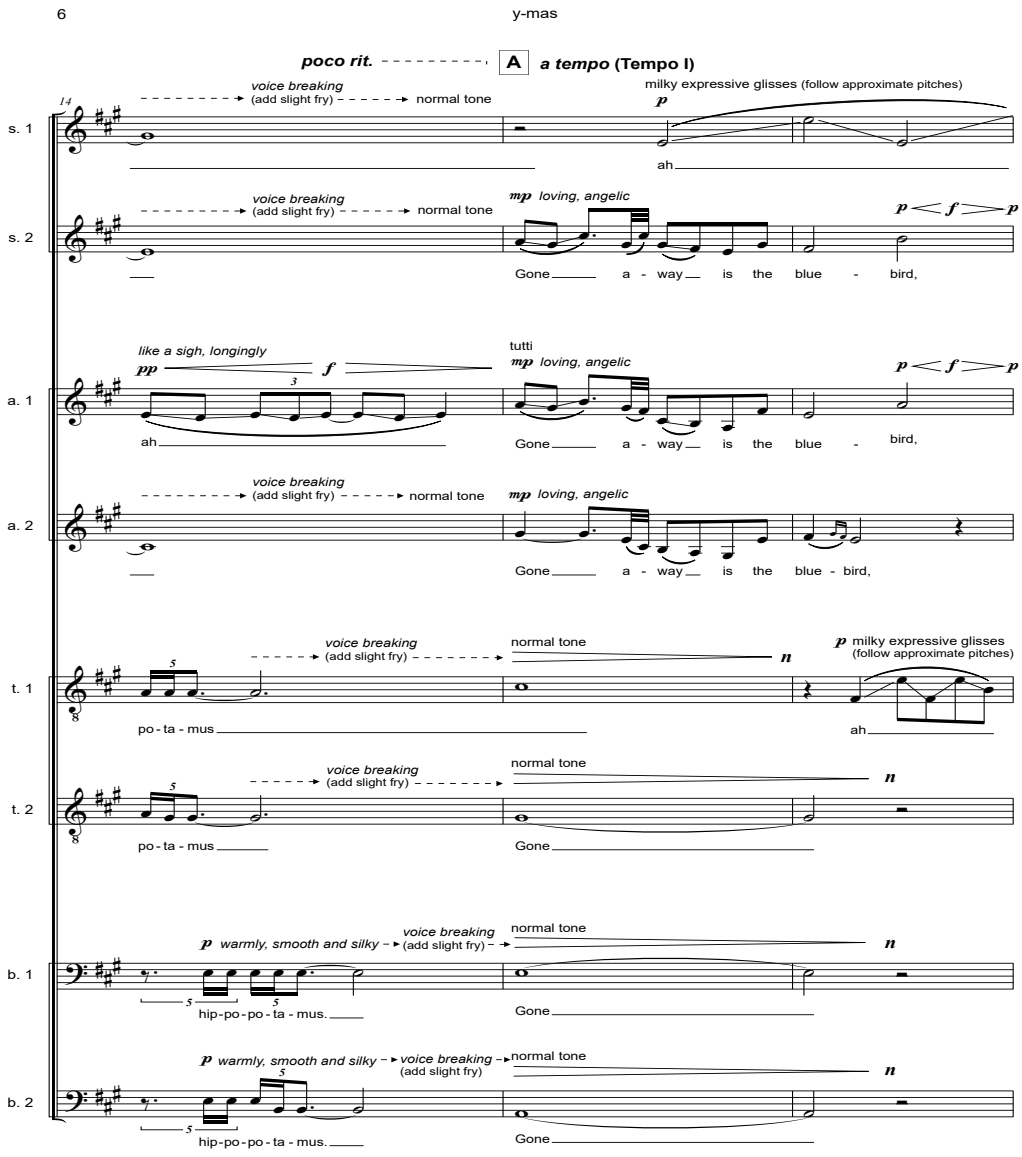
- The vocal fry occurs in various spots and in different ways. It first occurs in m. 9 with the Soprano 2 and Bass 1 voice parts.



- A similar iteration occurs in m. 28 with the Tenor 1 and Bass 1 voice parts.



- The editorial marking for this piece is “vocal fry (low and groany)” and is marked with the expected X-note head notation. The IPA notation under the note also adds an appreciated level of specificity. Interestingly, there is a wide dynamic range moving from forte to piano on a vocal fry. This is not a feasible expressive possibility without incorporating pitch at the onset. It is possible that the dynamic markings are copied over from the other voice parts that have sung pitches at that same moment. But as it is presently notated, it would not be possible without some alteration to the dynamics or quality of the vocal fry. Similarly, the occurrence in m. 28 is clear in its intent, but vocal fry will never be truly *forte* in dynamic, as this is marked.
- A different incorporation of vocal fry occurs in M. 14, in all parts except Alto 1.



- This editorial marking is slightly different: “voice breaking (add slight fry).” In this instance, the composer Shekar is ironically using the 1953 Christmas tune “I Want A Hippopotamus For Christmas” as a vehicle to express her feelings of otherness as a brown-skinned American struggling to fit within her community. There is a child-like fragility and innocence to the beginning of the piece–a far cry from the feeling and tone of the original radio tune. The integration of the “voice breaking vocal fry” effectively creates a sense of brittleness to the moment, a sound that is like when a person could begin to weep at any moment.
- This specific technique could be approached in multiple ways, and I could see how varying conductors would interpret the technique differently. First, it is worth mentioning that Shekar’s inclusion of the parenthetical “(add slight fry)” is critical to understanding the composer’s intent. The initial prompt “voice breaking” without the added parenthetical would likely yield a much different sound, like that of a voice “crack” or yodel where the registers of the voice are exposed. The real challenge of achieving the present notation is maintaining the sustained pitch while allowing for some fry to occur. One could more easily create the notated progression by beginning on pitch, descending into vocal fry, and sliding back up to the notated pitch. However, that maneuver seems to be less subtle and goes beyond the prescribed “*slight* fry”.
- The simplest solution from a conductor’s standpoint may be–like in the Hearne–to divide singers within the section, designating some as singers of the pitch and others as vocal fryers, when notated.

Practice:

This technique is something that individual singers must be comfortable experimenting with through trial and error, as it will be a unique sensation for each person. It is worth noting that beauty of tone will obviously be sacrificed in this case to achieve the desired effect. Humility and a commitment to storytelling is an aspect of this experimental process that should not be ignored.

I would encourage singers to begin with the same "Vocal Fry *Messa di Voce*" outlined in the Hearne section. Once that feels achievable and repeatable, begin singing a comfortable pitch in a light dynamic, slowly reducing the air flow. A reduction of airflow to the almost complete minimum necessary to still create pitch should create a sense of those bubbles or fry in the sound.

Another approach is to involve some false vocal fold constriction. This sound is like a growl and is heard often in certain popular vocal styles and heavy metal. Though the sound will be significantly more subtle than in those styles, it is worth exploring the anatomy and function to achieve an intentionally constricted vocal production. The false vocal folds (or vestibular folds) are located above the true vocal folds and are relatively uninvolved in normal vocal production. They do not vibrate in the same way as the true vocal folds, nor do they fully adduct, thus they do not originate sound.[33] However, when constricted, the swallowing mechanism begins to engage, slightly elevating the larynx and creating a tightened and growling tone.

Begin by singing a pitch in the upper range of your voice and allowing the laryngeal position to elevate, as if swallowing. This should not be done with high intensity, but rather with

[33] Zheng, Xudong et al, "A Computational Study of the Effect of False Vocal Folds on Glottal Flow and Vocal Fold Vibration During Phonation," *Annals of Biomedical Engineering* vol. 37, no. 3 (2009): 625-42, doi:10.1007/s10439-008-9630-9.

a low to moderate amount of airflow and pressure. This sensation is similar to how young untrained male voices tend to vocalize in their upper range, with an engagement of the swallowing muscles to the point of sound distortion. Once you feel and hear this distortion to the sound, attempt to achieve the same sensation on more middle range pitches and sustain over time. Eventually, this should result in a comfortable crackling of the voice that includes discernible pitch the entire time.

Vocal Fry Conclusion

Vocal fry can be an expressive vocal technique to advance storytelling. While notation and approach may vary, its inclusion within composition is increasingly common. Singers, teachers of singing, and conductors benefit from this understanding of how to approach vocal fry with anatomy and vocal health in mind. Singers must be willing to play with the vocal instrument with curiosity to find success and comfort in vocal fry.

Topic 3: Twang (And Understanding Timbral Shifts)

Describing sound is inherently abstract and individual. This is true of all the senses. The taste of a lemon, for example, may be sweet to one person and sour to another. Sound is similar in this way, and to create language that describes sound and how most people perceive it, we often use visual descriptions. Color—or characteristics of color—are often used in the description of musical and non-musical sounds. Brightness and darkness, for example, are used most frequently. There is also a sense of dimension that may be described, referring to sound as either shallow or deep. These descriptions are defining timbre, which is "the character or quality of a musical sound or voice as distinct from its pitch and intensity."[34] The latter part of that definition is worth highlighting. A vocal sound's timbre may be defined as bright at *either* a low frequency (pitch) or a high frequency. Similarly, the sound may be bright in vocal color at *either* a low amplitude (dynamic, or "intensity," to match the previous definition) or a high amplitude. Timbral characteristics and parameters of frequency and/or amplitude are independent of one another, and should be thought of and practiced dynamically, playfully, and within a fluid spectrum.

Within contemporary choral music, composers are increasingly asking singers to express wide shifts in their timbre, sometimes from movement to movement of a large work, sometimes from section to section of a piece, others within a single measure of music. These timbral shifts are highly interesting from a sonic perspective and can offer a tremendous opportunity to express swings in emotion or mood. The challenge is asking the singers to know their instrument well and how to healthfully and confidently evoke the vocal effect in question. To gain this

[34] *Oxford English Dictionary,* s.v. "timbre," accessed July 29, 2024, https://www.oed.com/search/dictionary/?scope=Entries&q=timbrally.

confidence, training must be implemented within solo vocal development prior to the group nature of a choral rehearsal.

Balanced Timbre and *Chiaroscuro*

In solo singing, style and genre are a crucial factor in determining one's vocal timbre, and each vocal style has certain aesthetic expectations associated with it. In classical singing, for example, the aesthetic expectation is a relative balance of the vocal colors. In Italian *bel canto* singing, this balanced timbre is often referred to as *chiaroscuro.*[35] This Italian literally translates as "bright-dark." I enjoy W. Stephen Smith's interpolation of this term in his book *The Naked Voice: A Wholistic Approach to Singing.* On this topic he writes:

> Most conductors, voice teachers, and coaches try to help singers achieve a balanced sound. They want to hear both a brightness and darkness in the sound, but they tend to emphasize the *chiaro* quality because of its seeming ability to cut through an orchestra. Terms that are often used to describe that quality are brightness, core, focus, edge, ring, metal, singer's formant, ping, mask resonance, forward placement, *squillo*, bite, and cut. Each of these terms has different connotations in regard to vocal production, but all are attempts to describe the *chiaro* quality. The term I most often use to teach the *chiaro* concept is *core* because it evokes the essence or center of something, just as the core of an apple is its center. It is like an undecorated Christmas tree. Our core is the essence of who we are.
>
> The terms most often associated with *oscuro* are color, resonance, richness, roundness, space, shimmer, spin, bloom, "opening up," and "making more room." Many singers try to get the *oscuro* sound by yawning, dropping the jaw, and imagining some kind of fruit in the back of the throat. All of these ideas aim for a sense of space in the back of the throat, but they often cause people to drop the jaw too far and push down on the voice with the base of the tongue. That might provide more color and resonance, but it also creates a manipulated sound and inhibits the flow of air.[36]

I appreciate Smith's interpretation because it speaks to both the understanding of how this balance is achieved, as well as pointing out potential faults that may creep in. For centuries, this

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[35] *Chiaroscuro,* though a term heard frequently in vocal instruction, originates from Renaissance visual art, to describe contrasts between lightness and darkness.

[36] W. Stephen Smith, *The Naked Voice: A Wholistic Approach to Singing* (New York: Oxford University Press, 2007), 46.

chiaroscuro balance has been the aesthetic expectation within classical vocal music. Not surprisingly, this led to a saturation of teaching this bright/dark vocal balance within traditional modes of vocal training, especially within higher education. The benefits of *chiaroscuro* are many. Chiefly, it requires a consistency of tone and airflow. This tends to lead to healthy, repeatable and "honest" sounds. While not an easy balance to achieve consistently, it is beneficial to master.

However, it is reminiscent of Topic 1's Vibrato/Straight-Tone concept: it can become easy for teachers to determine for their students what "good" singing is based on the aesthetic expectations of a style. "Good Singing = Vibrato/*Chiaroscuro.* Bad Singing = lacking vibrato, missing the color balance." Despite several positives to learning and achieving this vocal balance (especially, of course, for students aiming for a career in Western Classical singing), it is possible that the pedestal on which *chiaroscuro* is placed limits the full range of sound exploration for the singer and may also limit a singer's ability to know the full capacity of their instrument. A valuable resource for singers and teachers looking to expand their vocal flexibility is *Cross Training in the Voice Studio: A Balancing* Act by Norman Spivey and Mary Saunders Barton. They state that "the process of cross-training in the applied studio yields surprising results when singers are willing to stretch beyond any self-imposed vocal identity."[37] Furthermore, in the context of contemporary choral music, timbral extremes and intentional imbalances of *chiaro* and *oscuro* are being composed, particularly is it pertains to bright, twang-y timbres, and therefore must be explored and practiced.

It is worth mentioning that every individual voice has timbral tendencies. Some voices are inherently brighter, or metallic; some naturally possess a richer, deeper, or darker quality.

[37] Norman Spivey and Mary Saunders Barton, *Cross-Training in the Voice Studio: A Balancing Act* (San Diego: Plural Publishing, 2018), 32.

However, with training, all singers can achieve a broad spectrum of vocal colors. Once vocal flexibility is consistently achieved, the singer may find a more comfortable vocal balance, increased vocal health, increased ability to express character and dynamics, more stylistic adaptability, and may become a more marketable and successful singer who has the ability to sing across several genres.

Registration and Timbre

The voice is a dynamic and flexible instrument capable of a wide spectrum of sounds. As the voice moves throughout different parts of the vocal range, differences in tone and timbre may occur. These changes of tone are a result of shifts from one vocal register to another. "Registers refer to portions of a singer's range. Pitches within a given register have the same general tone quality."[38] Although there are varied perspectives on how many vocal registers a person has and what they are to be named, (and additional perspectives on style/genre and their effect on the function of those registers), there is general consensus that two primary registers exist in all voices. Again, I turn to Davids and LaTour for their concise explanation:

> "The two registers used in most singing are the lower register (often called chest voice) and the upper register (often called head voice). Some terms singers may encounter include:
> - **Lower Register**–chest voice, heavy mechanism, Mode 1, TA-(thyroarytenoid) dominant
> - **Upper Register**–head voice, light mechanism, Mode 2 (though some restrict Mode 2 to falsetto), CT-(cricothyroid) dominant."[39]

A singer's lower register is most aligned with that person's natural speaking tone, and the vocal folds are thicker in this mode due to the engagement of the thyroarytenoid (TA) muscles. The resulting sound in lower registers tends to be richer and fuller. By contrast, the upper register tends to produce a lighter vocal quality, with less muscular engagement. This is caused by a

[38] Davids and Latour, 157.
[39] Ibid, 158.

reduction of thyroarytenoid muscle engagement and instead–assuming a relatively stable laryngeal position–an engagement of the cricothyroid muscles occurs, tilting the thyroid cartilage, which allows for the vocal folds to stretch and increase flexibility as pitch ascends.[40] There are also portions of a singer's range where the function and tone resemble a mixture of these two registers. The extent of this "mixed register" is significantly dependent on the singer's voice type.

It is worth noting that these registers are true of all voice types, but transitions will occur in different parts of the vocal range based on the voice type and individual. Through training, a singer should know the pitch location and tendencies of their individual register shifts. This allows the singer to understand how to approach the singing within that particular register, as well as how to navigate the shifts between the different modes. Additionally, it is repertoire and style that will often define how shifts in vocal registration will be handled. Like the balanced concept of *chiaroscuro* in classical singing, register shifts in the classical arena aim to be as smooth and seamless as possible to avoid sudden changes in timbre as pitch is altered. However, in contemporary vocal styles such as pop or country, register shifts are often intentionally exploited to bring attention to the contrasting sound, either to highlight an emotional effect, or to simply match industry aesthetics. For example, one can easily imagine a country singer's pronounced "yodel" quality that is often placed at the end of certain words or phrases. This fast ascension in pitch without stabilization of the larynx produces an obvious timbral shift as the pitch passes from the lower register to the upper register. It almost sounds like an intentional "vocal crack," like that of a child's voice experiencing the effects of puberty. This has become a stylistic nuance within the genre, and almost an industry expectation. One can also understand

[40] Ibid, 159.

how this same effect would generally be avoided in the context of other vocal styles, namely Western Classical singing.

Timbral Shifts in Choral Repertoire:

In choral music, the idea of unity and "choral blend" has long been a supreme goal. Under this prioritization, an ideal choral sound would be a collection of many voices working individually and collectively to tune both pitch and vowel, while balancing to one another in a way that many voices become like one. This is largely still the goal in contemporary choral music, even in moments of extended vocal techniques and innovative compositional devices. However, an increase of raw vocal production to express emotion is becoming progressively common. To accomplish this, performers often sing in a more individualistic tone, which often encompasses more low register singing–with specific stylistic approaches added–to bring more of "oneself" to the sound. As mentioned earlier, the low register is more associated with one's natural speaking voice, and there are times in this repertoire that one's "vocal signature" may be allowed to come through at the cost of "perfect blend." Timbre is vocal color and vocal color paints a sonic picture.

The nature of these timbral shifts is led by the composer's interpretation of the text in their composition. However, traditional music notation does not have a way to indicate the desired timbre without the inclusion of written directions. Words such as "brightly," "nasally," "forcefully," or "floaty" are common to encounter. Each composer will have their own language preferences to describe their preferred timbral output. Likewise, varying conductors may interpretate those directives differently, and singers will certainly have different timbral capabilities within their instruments, allowing for a range of sonic outcomes. Therefore, whenever one can work directly with the composer of the repertoire, one must aim to do so. This

preserves the intention of the composer in that moment, and often clarifies any confusion caused by notational limitations.

Specific Examples within Repertoire:

The focus in this section will be on the area of vocal twang, a timbre defined by its bright, edgy sound and familiar in the world of musical theatre and commercial music. The justification of this focus is based on the prevalence of this timbre in compositions, as well as the lack of familiarity of the pedagogy and practice amongst singers, teachers, and conductors.

"I Seek to Change These Habits," mvt. 12 of *Titration* by Shara Nova

Titration is a 17-movement, hour-long work for SATB choir written by composer and performer Shara Nova. The piece was workshopped and then premiered in 2022 by The Crossing, a Grammy-winning new-music choral ensemble. I was a singer on this premier and remember the power (and challenges) of the numerous timbral shifts throughout these 17 movements. Shara Nova's musical background as a performer and arranger is primarily in rock and commercial music. While *Titration* is truly a choral concert piece, it's clear that the sonic world that Nova is working in is heavily influenced by her non-classical singing background. The singers are asked to make dramatic shifts in vocal color from movement to movement, and within sections of a movement. To highlight the inspiration and justification of these timbral changes, one must understand the context of the piece. The composer writes:

> TITRATION…examines difficult emotions like fear, sorrow, disgust or rage through the lens of the nervous system and utilizes body-centered practices that develop one's capacity to calm oneself when such emotions arise. In these times of conflict and crisis, how can we feel more, rather than less? With simple actions like humming, shaking, holding hands or intentional laughter, the song cycle explores ways that we can soothe our nervous systems, foster a sense of safety, and grow in our capacity to connect with each other. This music is greatly influenced by the Somatic Abolitionist body of work

> and practices of Resmaa Menakem. *"Somatic Abolitionism is a living embodied Anti-Racism practice and culture building that requires endurance, agility, resource cultivation, stamina, discernment, self and communal discipline cultivation, embodied racial literacy and humility. These can be built, day by day, through reps. These communal life and invitational reps will temper and condition your body, your mind, and your soul to hold the charge of race."* By exposing a person to distress, then taking a pause to calm the body, one learns to pay close attention to the body sensations experienced and when revisiting the traumatic event, a person gradually becomes better able to process the pain.[41]

This context is critical to the understanding of any musical and/or technical interpretation of the piece. A conductor, singer, and even audience member benefits from this level of context and detail, allowing for an understanding of how and why certain musical gestures and frequent timbral directions within the score exist.

One of the more extreme moments of timbral expression is the opening of movement 12, "I Seek to Change These Habits."

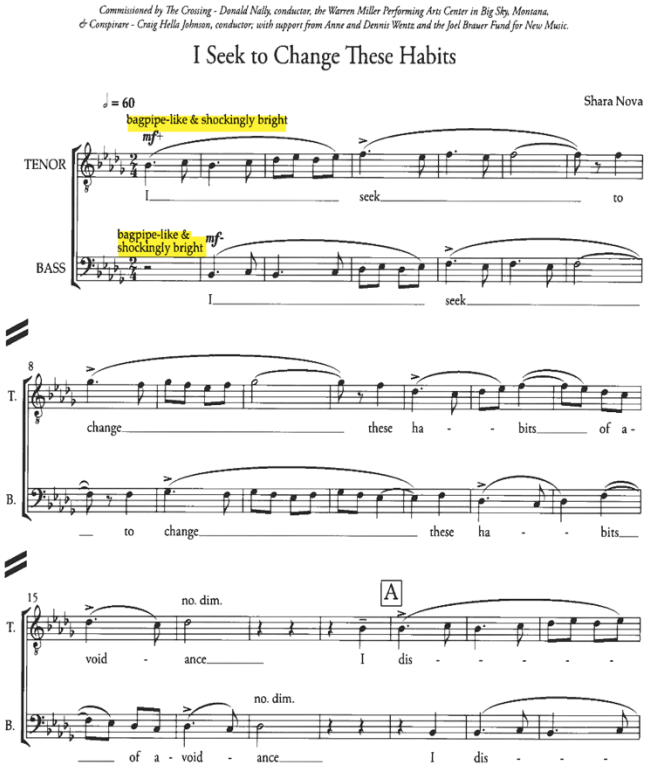

Figure 3.1, Tenor & Bass entrance of "I Seek to Change These Habits" by Shara Nova

[41] Shara Nova, "Titration Program Notes," accessed July 29, 2024, https://www.crossingchoir.org/titration.

- The movement opens with the choir's Tenors and Basses in a canon, displaced by one measure, sung in octaves. The beginning indicates a distinct timbral marking in both voices, highlighted above: "bagpipe-like & shockingly bright." This directive's specificity creates no confusion as to Nova's desired sound quality. I appreciate that even if there were a scenario that a performer was unfamiliar with the sound of bagpipes, the addition of "shockingly bright" summarizes the effect. While the sonic intention may be clear, the technique of how to produce and sustain it may be challenging (more on that below).
- The tessitura of the Tenor line is Bb3-F4; this is noteworthy because these pitches sit within the common register transition points of the tenor voice. While these register transitions will vary from singer to singer, the typical transition point for lower voices is indicated below in Figure 3.2.[42] The combination of factors including the range and registration, the timbral indication of "bagpipe-like," and the dynamic marking of *mf*+ means the Tenor section will be creating a very robust, bright, almost metallic sound, requiring significant understanding of one's technique.

Vocal Classification	Transition between Lower Register and Mixed Voice	Transition between Mixed Voice and Upper Register
Tenor	C4-D4	F4-G4
Baritone	Bb3-B3	D4-Eb4
Bass	Ab3-A3	C4-Db4

Figure 3.2, Tenor and Bass Registration Shifts by Pitch

[42] Davids and Latour, 166.

- In rehearsal, conversations with the composer lead to the addition of significant "twang" to the sound here, created with the perception of intentional nasality. The word "perception" is critical here, as the sound is not produced with true nasality but rather a narrowing of pharyngeal space (more on that will be discussed in the Practice portion below). A reference to 19th-century shape-note singing was discussed, indicating a bright, almost un-nuanced approach to sound (no dynamic phrasing, for example). This consistent twang allowed for the sound to remain bright while easing some of the thickness of the sound from the TA-dominant function within the ascending pitches of the Tenor line. Without this twang, the lower register being elevated to those upper pitches can cause vocal fatigue yet switching into a CT-dominant voice (like that of the upper register) would lose some of the necessary power of the moment.
- The register for the Bass voice is much lower and sits within a sort of upper-speech range. This simplifies the registration issue found in the Tenor part, as the Basses are nowhere near the transition points of their voices in this lower octave (see Figure 3.2). These pitches naturally sit within a darker timbre of the baritone/bass voice and therefore may make it difficult to achieve the brightness in this range without significant twang added to it.
- Throughout the movement, each voice part incorporates this "bagpipe-like sound," and therefore all singers are responsible for exploring this technique within their respective ranges. The Altos enter at measure 36, maintaining the same musical motive and timbre as the Tenors and Basses before them. The Altos experience the same registration transition point that the tenors did, allowing the sound to be intentionally full and TA-dominant. In many styles, singing in this register of the female voice is referred to as

belting, an intentional use of lower register tone quality and function in a range where mixed voice would typically occur.

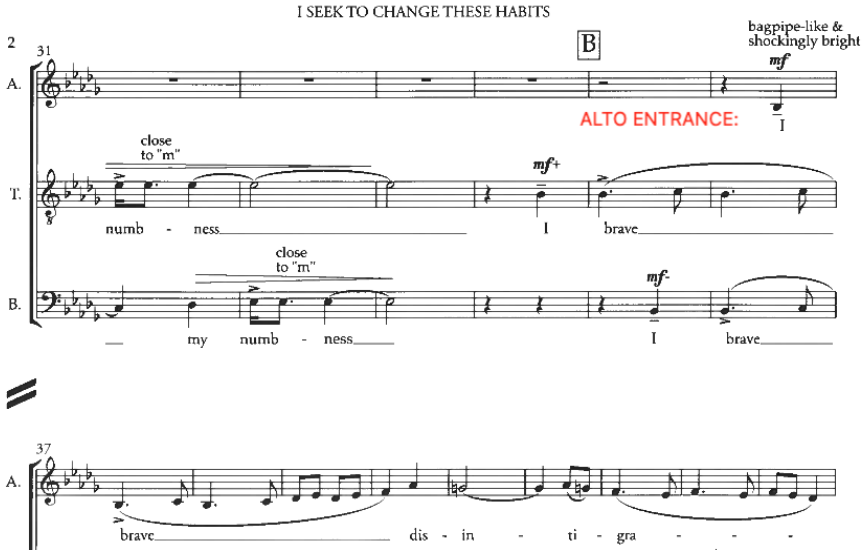

Figure 3.3, Alto entrance of "I Seek to Change These Habits"

- Notice that in Figure 3.4 below the Mezzo-Soprano (or Alto in the case of choral singers) lower register transition to mixed voice occurs within the same approximate pitch range as the Tenor voice, outlined earlier in Figure 3.2 above.[43]

Vocal Classification	Transition between Lower Register and Mixed Voice	Transition between Mixed Voice and Upper Register
Soprano	D4-Eb4	E5-Gb5
Mezzo-Soprano (Alto)	C4-Db4	Db5-Eb5
Contralto	Bb3-B3	C5-D5

Figure 3.4, Soprano and Alto Registration Shifts by Pitch

[43] Davids and Latour, 167.

- The Soprano entrance at measure 56 (Figure 3.5) is unique. They do not enter with the previous motivic, canonic material, but instead sing long tones in their upper-middle mixed range. See the entrance material below (singing Bb4 and Cb5) and then compare that range to the registration charts in Figure 3.4. This range and registration require an understanding of a reinforced mixed voice—certainly involving some tonal qualities and thickness from the lower register but reinforced with an intense brightness and ring (twang). This incorporates power and the bagpipe-like timbre while off-loading some tension and musculature at the vocal fold level. In many vocal styles, this quality in female singers is referred to as a mixed-belt.

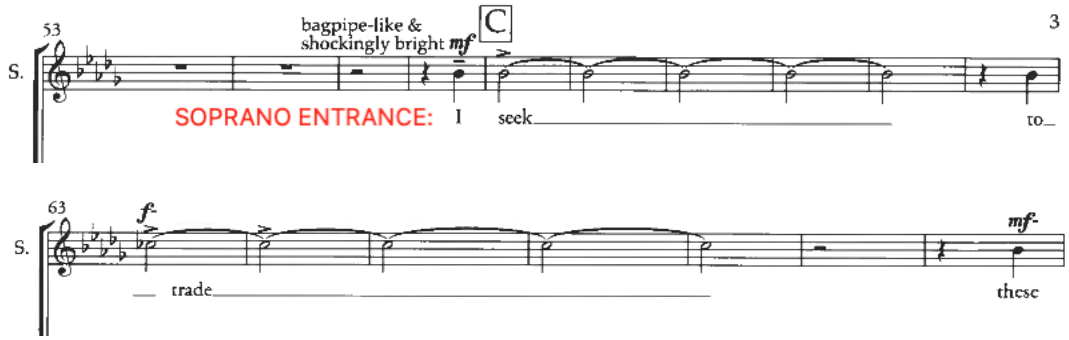

Figure 3.5, Soprano entrance, "I Seek to Change These Habits"

- The text here, requiring such a bright vocal color, is as follows:

> I seek to change these habits of avoidance
> I disrupt my comfort
> I interrupt my numbness
> I brave disintegration
> Exchange shame through honorable deeds[44]

These words, and the timbre that accompanies them, come in contrast to the previous movement, a four and ½ minute piece with long, sustained tones sung with a heady,

[44] Shara Nova, "I Seek to Change These Habits," *Titration* (self-published, 2022), 1-2.

hooty sound. Within the context of the Somatic work described earlier in Nova's program note, this timbral shift from that of the previous movement is meant to be a shock to performer and audience alike. The "disruption of comfort" comes from the intense consistency of the bright timbre. The sound should become somewhat "edgy" and remain relatively thick and belt-like while maintaining consistent use of airflow and twang. This balance (notably different than the *chiaroscuro* identity of balance) should allow for singers to maintain this timbre without fatiguing over this lengthy movement.

- There is an additional challenge in this movement, due to the shift away from this intensely bright timbre for brief moments, before returning to the bagpipe sound. See below for that notated instance.

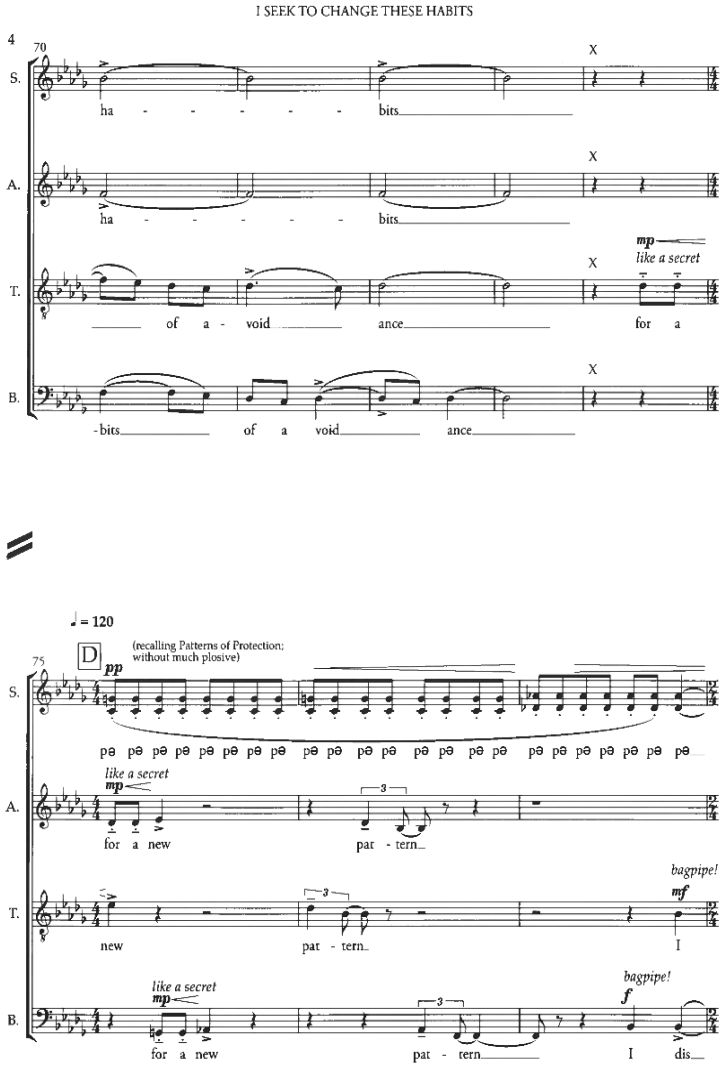

Figure 3.6, Timbre Shifts from Twang to "Secret"

All four voice parts are producing the bagpipe-like sound at the top of this page, before the timbral shift of "like a secret" is indicated. This implies not only a reduction in the dynamic being sung, but a color change to one of a lighter, more spacious and "hooty" quality. This will eliminate the twang previously used in the bagpipe section to highlight this contrast.

Practice:

There are numerous elements to extract for practice within these passages of *Titration*. Each voice part requires different technical mastery within their respective registrations, but one constant remains for all in the ensemble: the use of twang.

The Importance of Twang: What is it?

Twang is a distinctly bright and ringing vocal sound found in a variety of vocal styles. While the sound itself is easy to recognize, research has found it is difficult to pinpoint how exactly twang is produced. Kari Ragan offers a thorough definition and distinction of twang versus nasality in her book *A Systematic Approach to Voice: The Art of Studio Application.* She writes:

> The term twang is common nomenclature used to describe a brassy quality associated with ring and found within the broad spectrum CCM (contemporary commercial music), including musical theatre, pop, rock, and country. A discussion of terminology with regard to twang can be confusing because it identifies two very different vocal productions: *nasal twang* and *oral twang*. A primary physiologic difference between nasal and oral twang is the degree to which the soft palate (velum) is lowered or raised. Since both nasal and oral twang encourage a brassy, resonant sensation, it is possible to confuse actual nasal resonance achieved with a lowered soft palate (nasal twang) with the resonance achieved with a raised soft palate (oral twang).[45]

[45] Ragan, 200.

Due to the sonic output similarities, there is often confusion about if a sound is nasalized or being produced with twang. Both create a bright, brassy, ringing sound. However, the distinction of these two different functions is important, as twang tends to be a more sustainable resonant strategy over time and contributes to a significant bump in amplitude potential. Kerrie Obert is a leading researcher on this topic (among a variety of other vocal topics), and alongside voice science researcher Chadley Ballantyne, the two suggest that "twang is acoustic energy above 5000 Hz" and that "pharyngeal narrowing creates twang."[46] They go on to explain that "when singers use twang, they are amplifying high harmonics well above the fundamental frequency in the complex soundwave."[47] More simply put, the use of twang created by a narrowing of the pharyngeal wall (the space above the larynx, in the back of one's throat), allows for more acoustic potential resonance, power, and ring without an increase in effort.

There is an important distinction that twang resonance is different from that of the vocal ring in Western classical singing. That range, referred to most often as the singer's formant, occurs at lower frequencies, around 2500 to 3500 Hz.[48] Many aspects of both the description and production of twang seem in contrast to what many teachers of singing have instructed for centuries. Of course it deviates from the timbral balance of *chiaroscuro,* pushing highly in favor of the brighter harmonics, and it also points to a narrowing in the back of the singer's throat, which is different than the typical open, rounded sensation often aimed for in classical vocal production. Nicholas Perna writes about this conflict of ideas in his 2020 NATS Journal article titled "Nasality Deconstructed" stating:

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[46] Ibid, 201.

[47] Chadley Ballantyne and Kerrie Obert, "NATS Chat: Getting the Twang Of It," January 13, 2019, video, 1:02:06, https://www.youtube.com/watch?v=KHjbqUYrb04.

[48] Ragan, 201.

> Coming from a Western classical background and having previously used McKinney's *Diagnosis and Correction of Vocal Faults* as a textbook for my pedagogy courses, I had been accustomed to teaching twang as a resonance fault. Thanks to many of our colleagues teaching and researching CCM styles, I now realize twang's importance in commercial voice training and performance. The Western classical teacher in me still recognizes that excess squeeze of any laryngeal musculature is less than ideal for unamplified singing.[49]

However, when a well-trained singer practices these skills, twang and the requisite pharyngeal narrowing feels rather subtle and like an ease of production rather than a "squeezing."

Registration does play a role in the utilization of twang. While it can be used across a singer's range for affect, it is most important in ascending pitches through the mixed register (of any voice type) and in the upper belt-like registers. It allows for the illusion of thickness in the sound, thanks to the acoustic boost it provides, while off-loading some of the effort at the vocal fold level. It should be noted that a slight elevation of the larynx is to be expected when singing with twang in upper, mixed registers; keeping a low or even depressed laryngeal position while narrowing the pharyngeal space will create a feeling of discomfort for the singer and produce a hyper-functioning sound. Obert states that "twang can also result in a system that is overly pressurized, particularly if there is too much narrowing," and is best introduced at soft dynamics, with playful sound exploration.[50]

Playing with Twang

This section assumes that the singer attempting twang can utilize flexible laryngeal positions, consistent breath and vibratory balance, and understands resonant strategies. With

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[49] Nicholas Perna, "Nasality Deconstructed," *Journal of Singing,* 76, no. 4 (March/April 2020): 430.

[50] Kerrie Obert, "How to Sing With Twang," produced by Singing Teachers Talk Podcast, March 6, 2024, video, 46:39, https://www.youtube.com/watch?v=1cga5-BU1XI.

those traits, playing with sound and character voices can inform the pharyngeal narrowing discussed.

First, using a bright but natural speaking voice, say the word “nasty,” lingering on the initial “n” consonant. Then, still in that bright speech, add a glide after the initial consonant, rolling the medial portion of the tongue off the roof of the mouth from front to back; the word should now resemble the phonetic spelling of [njæsti]. Repeat this initial syllable [njæ] with a bright timbre, noting that the combination of the nasal consonant and fronted vowel are inherently bright. Continue to add length to the vowel in speech, while keeping the brightness, then ask the following questions: what is the position of my larynx? What is the perceived shape/space in the back of my throat? While there will be variations to these answers, typically the laryngeal position on this sound is comfortable, yet tends upward, and the back of the throat (pharynx) feels shallow in height and a bit wider laterally. This creates a pharyngeal narrowing and twang timbre.

Next, apply this sound to a variety of exercises. Begin at a soft dynamic and comfortable middle range. Sing a descending five-note scale on [njæ] and try to keep the integrity of the word “nasty” in mind. While the sound may not be nasty itself—it may be quite thrilling, in fact—the image of the word will add character and inform the timbre. Continue this exercise ascending by half steps, while maintaining ease in production and height in the tongue.

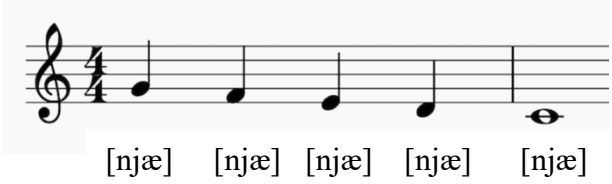

Figure 3.7, finding twang with [njæ],

Other great ways to find twang are to create a bright "meowing" sound like that of an irritated cat, or to imitate the wailing cry of a newborn. Feel free to play with the addition of nasality into the sound, while remembering that these oral twang sounds can and should be learned independently from true nasal twang. To test if sound is being overly resonated in the nasal passage, one can plug the nose while sustaining one of these twangy vowels. If the sound significantly changes when the nose is plugged, then too much air is escaping through the nasal passage and the soft palate can be elevated.

A Closer Look

This section will be divided into practice tools for each of the four voice parts as it pertains to their musical material in this movement of *Titration*. They will be introduced based on the chronology of entrances in the score.

Tenors:

- Recall from the score in Figure 3.1 that the opening motive in the Tenors here is within a mixed register. This therefore requires choice by the singer (or in this case, the conductor as well), to determine the quality of their tone and the function of their vocal fold thickness. Given the bright timbre request, dynamic marking of *mf*+, and tessitura of this passage, the singers are essentially employing a TA-dominant speech mix. This is not to be sung in a true "belt" style because it is not marked at a higher dynamic, nor is it high enough, as it primarily stays below the second register shift where CT function dominates. To develop this speech-like mixed voice, it is best to turn to the pedagogy of music theatre singing specialists, as this is a common quality of sound used in that singing style. The best resource for this is once again Spivey and Barton, whose text

offers explanations and exercises in plain, accessible language. As done previously with twang, we begin with speaking first, followed by singing:

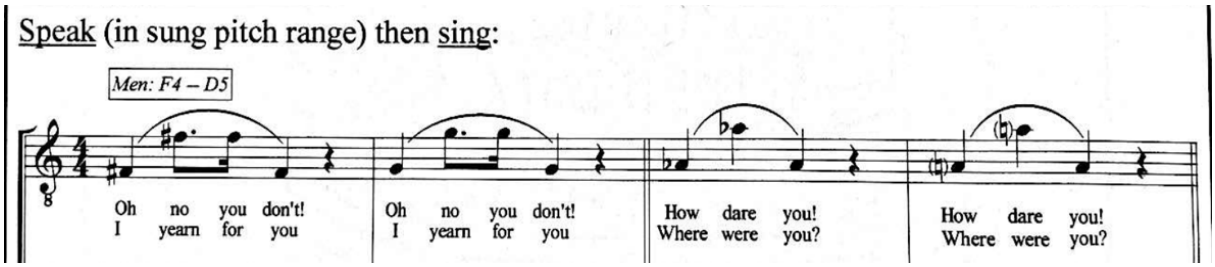

Figure 3.8, finding Tenor Speech-Mix (Spivey and Barton, 44)

- This exercise benefits from the speaking before singing technique, allowing for the natural spoken quality to filter into the singing. Caution against bringing too much weight from the bottom TA-dominant pitch into the top pitch. Allow for a real sense of slide within the octave leap.
- Additionally, as the authors expand, "what makes phrases like the ones in this exercise useful is that the dramatic intention is so clear."[51] Intention and commitment should always be incorporated into the practice.
- Once this is increasingly comfortable and feels speech-like while on pitch, add in the twang exercises from above.

Basses:

- The basses enter with the same material in a lower register, one that is inherently speech like, but not necessarily bright. To achieve the requisite bagpipe-like timbre, the basses may need to incorporate nasality *in addition* to twang. Twang is most effective in upper

[51] Spivey and Barton, 44.

registers but can be utilized across the range. However, the true TA-dominant registers (like the basses sing with here) lose some of the edgy, brassy timbre. Therefore, nasality in combination with the narrowing of the pharyngeal walls may be played with.

- Nasal consonants such as [n], [m], and especially [ŋ] should be played with. Finding an awareness of the velum (soft palate) is crucial. Begin by speaking or singing in a comfortable register the word "hung," lingering on the [ŋ] sound, followed by varying vowels. For example, "hung-gee" or "hung-gay" or "hung-gah", etc. In pronouncing the word with a hard [ɡ] that follows the [ŋ], one can feel the elevation of the palate.

Low palate, nasalized sound — raised palate, non-nasalized sound

- Play with a nasal spectrum from 1-10, where "1" is a completely non-nasalized sound and "10" is a full-nasalized sound like the [ŋ], with almost no ability to discern text. By exploring this nasality and the flexibility of the velum, singers both individually and as a section can determine the most effective amount of nasality to be added with the twang for this passage.

Altos:

- Despite it being in the lower-middle part of the range rather than the upper-middle mix, Altos enter with many of the same challenges as the Tenors. That is because the register shifts of these voice parts happen at essentially the same pitch point (refer back to Figures

3.2 and 3.4). Therefore, the same concepts are in play and developing a speech-dominant mix is vital to the Alto sound having the required edge and core, in addition to twang. A similar exercise to that of the Tenors is outlined below, with the appropriate pitch areas outlined. Again, it is important to being by speaking with character and intention before applying it to the pitches.

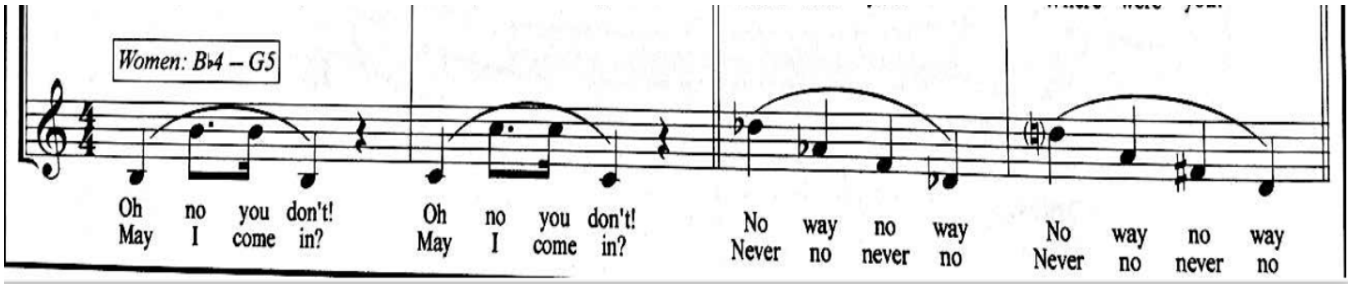

Figure 3.9, finding Mezzo Speech-Mix (Spivey and Barton, 44)

- Many choral singers are trained out of this speech-based, TA-dominant sound because it is individualistic and can impact the effectiveness of choral blend. However, this sound is also powerful and impactful at moments of high drama and should be developed. Additional exercises from Ragan are outlined below for practice.

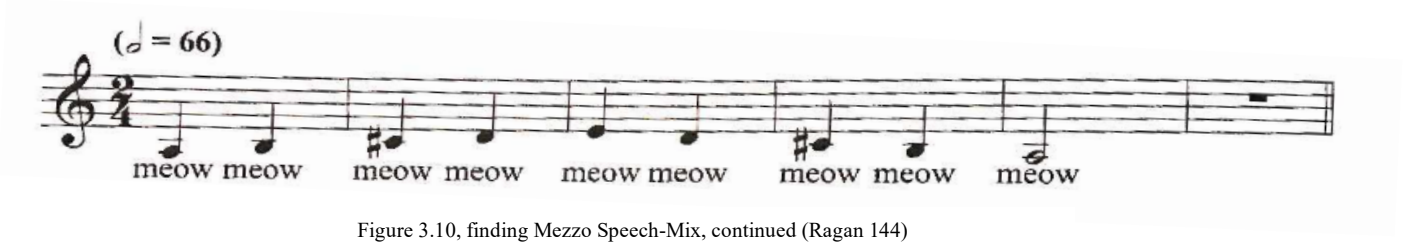

Figure 3.10, finding Mezzo Speech-Mix, continued (Ragan 144)

The natural sounds of this word “meow” allow for a bright and effective mixed voice. Continue this pattern ascending by half-steps, attempting to allow for little sonic changes throughout the registers.

- Alternating timbres and registration modes is also a useful skill to enhance vocal flexibility. See below for an example from Ragan:

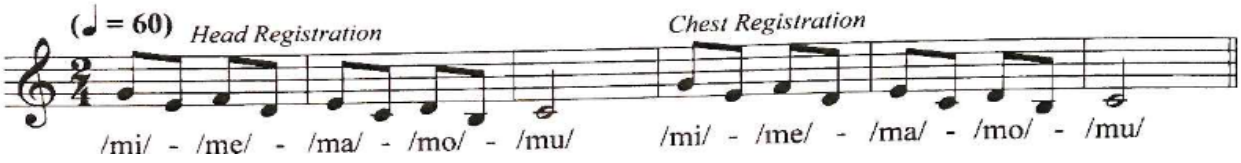

Figure 3.11, alternating registers (Ragan 148)

Continue alternating these registers as you progress either ascending or descending by half-step. While head register singing would not be utilized in this section of *Titration*, observing the laryngeal and pharyngeal differences between the modes can inform a better solution to mixing or blending them effectively.

Sopranos:

- The registration and timbral demands of the Sopranos indicate the same exercises as the Altos should be used, despite the pitch range being a bit higher. That is because the Sopranos still fall within a typical register of speech-mix rather than "true belt," though that can be differentiated from singer to singer. "True belt," meaning lots of TA-engagement and a very speech-like quality will feel overly forced in this moment, especially because it is an ensemble sound, not a soloist.
- One nuance of the Soprano section here is the sustained nature of the pitches. They are still twangy in timbre (and should explore those exercises as well), but do not move on a

melodic line. To ensure freedom and flexibility, I suggest Spivey and Barton's *messa di voce* sample as a sort of conditioning exercise for singers.[52]

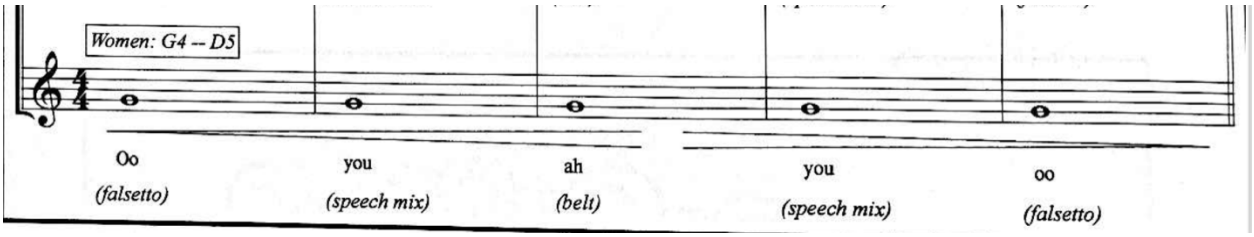

Figure 3.12, timbre and registration *messa di voce*

The word *falsetto* may be uncommon in the training of female voices, but the idea here is a very thin head voice. By beginning with these thin folds on a narrow, closed vowel and progressing with both amplitude and vocal fold thickness, the singer develops a more dynamic understanding of their vocal fold vibratory function and resonant strategies. This playful spectrum explores the potential power and expressivity of the voice in each of these registers, while on a single pitch.

Twang Conclusion

Additional pieces within contemporary choral music that utilize extreme timbral shifts are worth exploring to illustrate the consistency of this request of singers by composers. They include, and are certainly not limited to:

Partita for 8 Voices (Caroline Shaw, 2012)
Vesper Sparrow (Missy Mazzoli 2012)
Sound from the Bench (Ted Hearne, 2014/2017)
Zawazawa (Dai Fujikura 2016)
Shift (Ayanna Woods, 2020, 2021)
y-mas (Nina Shekar, 2021).
Man Up/Man Down (Robert Maggio, 2021)

[52] Spivey and Barton, 50.

The complete movements of *Titration* (Shara Nova, 2022)

There is a vast amount of specificity and care that can go into preparing a contemporary choral piece for performance. There is unique training that should be done for artists singing this repertoire to effectively and healthfully perform these timbral shifts. By reducing, or in some cases eliminating, aesthetic bias and genre hierarchies, singers feel liberated to play with their voices in a way that can produce the most effective sound for that moment, while being dynamic and fun. Vocal pedagogy from all genres including classical, musical theatre, jazz, pop/rock/commercial music, indigenous and global music genres can positively influence the technical approach of a singer. The incorporation of twang is essential for both vocal health and longevity and in the production of an ever-increasing timbre expectation occurring in the repertoire.

Conclusion

There are many additional skills not addressed here that enhance singer versatility and effectiveness, particularly at the highest levels of contemporary choral performance. Among them are yodeling, throat singing and overtone singing, intentional scooping into pitch/pitch inflection, micro-tonal singing, and rhythmic relationships to the beat. These areas will be explored in future research.

However, these three topics—Straight-tone Singing, Vocal Fry, and Extreme Timbres/Twang—are skills that the contemporary choral musician will encounter frequently. Composers may notate them differently and have different desired outcomes, but the ever-increasing demands of the singer to perform them is evident. With very little rehearsal time to perfect these challenging pieces, it is the singer's responsibility to enter the rehearsal room with these skills in their toolbox. Though these skills are not traditionally taught in Western Classical vocal technique, there is ample material available on how to healthfully and repeatedly perform them. Singers, conductors, voice teachers and composers can rely upon this document to provide a practical framework for discussing and practicing these techniques.

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