VOICE*Prints*

JOURNAL OF THE NEW YORK SINGING TEACHERS' ASSOCIATION

MARCH–APRIL 2016

IN THIS*Issue:*

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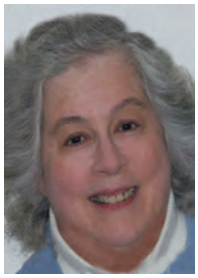
NYSTA's Oren Lathrop Brown Professional Development Program *presents:*

SINGERS' DEVELOPMENTAL REPERTOIRE

Christopher Arneson



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Featured Event

CONCERT & BIRTHDAY TRIBUTE TO TOM CIPULLO

Tom Cipullo

Sunday
April 17, 2016
2:00–4:00 PM

Reception to follow

Marc A. Skorca Hall, National Opera Center
330 Seventh Avenue, New York City

NYSTA is delighted to honor New York composer Tom Cipullo by presenting a full-length concert of his vocal works, chosen by the composer himself and assisted by singers from the New York Metropolitan Area. Cipullo's works are performed regularly throughout the United States and with increasing frequency internationally. He has received multiple fellowships from Yaddo, the MacDowell Colony, and the Virginia Center for the Creative Arts, and awards from the Liguria Study Center (Bogliasco, Italy), the Fundacion Valparaiso (Spain), the Oberpfaelzer Künstlerhaus (Bavaria), and ASCAP. *The New York Times* has called his music "intriguing and unconventional." Cipullo's acclaimed opera, *Glory Denied*, was premiered at Fort Worth Opera and recorded on Albany Records.

MESSAGE FROM THE *President*

Sick...*Again?*

Illness periodically makes its evil rounds in any given year—you can feel it coming. It seems to hit especially hard when the heat is on inside our buildings and the temperature is down outside them—and, of course, the performing season is going full tilt the entire time.

As voice teachers, we are in the same position as those teaching in the public school system. We encounter many students in any given week and we tend to catch everything they bring in. Some teachers swear by hand sanitizers (and, certainly, frequently washing one's hands helps keep germs at bay), others by various over-the-counter remedies such as Airborne, Zicam, or nasal gels. Some years ago it was Echinacea, garlic pills, zinc pills, or whatever latest herbal concoction was making the rounds.

I am not saying these medicines don't give a measure of relief for some people, depending on what strain of bug you have and how long it's been in your system. Since there have been reported side effects to virtually everything, I tend to opt for natural remedies whenever possible. Unfortunately, none of it has ever worked for me when I've contracted a cold or flu—ever! I remember spending a small fortune a few years ago on an over-the-counter medicine, highly touted, that emptied my wallet but gave me not the slightest relief.

Even if we teachers manage to avoid getting sick, our students never do. What do we tell them when they're looking for relief from a nasty cold or a major sinus infection that has left them miserable? What do you say to a singer staring down the barrel of a major performance obligation who can barely phonate or who is completely unhappy because s/he hasn't been able to talk, much less sing, for a couple weeks, if not longer?

Obvious recommendations: the Neti Pot for sinus problems, a cool or warm steam machine, something to help suppress coughing, a medication to thin out mucus, plenty of rest, a multivitamin on a regular basis, eating well, and then, just riding it out. For the common cold, the very best one can hope for is a slight alleviation of the symptoms. If something worse is suspected, and the upcoming performances must go on, then it's straight to the best voice doctor one knows for a diagnosis and help. I wish it were as "simple" as that for all our singers.

One of the more troubling questions for me has been what do we do, what *can* we do for the singer who constantly falls prey to every malady under the sun? In the last decade, perhaps longer, it seems that college-age singers are more prone to sickness than I ever remember. The demands of an academic program certainly challenge the body's need for sleep; singers regularly skip meals and don't eat well when they do eat. Their schedule of classes, rehearsals, and homework responsibilities does not allow for virtually any "down" time, to say nothing of work responsibilities on and off campus just so they can afford to continue their studies. And this is just as true for those who are already working in the profession. All of those elements, plus the dynamics of family and interpersonal relationships, create stress for performers (and their teachers!) and *wham*, some singers become ill on a regular basis. Can you make yourself sick if you're unhappy with your life and with your singing? Most definitely.

Unless one suspects a verifiable vocal condition demanding immediate medical attention, we cannot in conscience recommend to this type of periodically-ill singer that s/he see a doctor every three weeks or so. First, the medical bills will be astronomical, even with insurance—and that's assuming the singer can get an appointment with a reputable otolaryngologist within the requisite time frame; second, there may be nothing to "find." With certain performers who repeatedly become ill every few weeks or so, something much more than contracting a bacteria or virus may be the root of the sickness.

To be sure, depression and fatigue can compromise the immune system on a more or less consistent basis and there certainly are recurring vocal problems that may not yet have been solved. Every singer has experienced unhappiness at some point in the career when being unable to sing makes life seem empty and worthless; luckily, it usually only lasts until health returns. But it's a more serious problem if a singer bases his or her total worth as a human being on the ability to sing on a daily basis. That person's self-esteem desperately needs to expand to include other criteria. If not, vocal illness may continue to occur to the point where nothing can be done by or for the singer. Without a balanced life that allows both physical and mental health, a career, an artist can possibly be lost.

I have had two such students in the recent past, and have one currently. I am wondering aloud what more we can do as teachers to help our singers—particularly the more physically fragile ones—to manage the demands of (vocal) life, no matter what genre they're drawn to. It seems more and more to me that the answer lies in social and behavioral psychology. Yes, we are not psychologists or psychiatrists, but we are often closest to what the student's heart and mind (and personality) need—and with our special one-on-one relationship, so central to the teaching profession, our perspective on a particular singer is often more accurate than the singer's.

I continue to be drawn to books like *The Singer's Ego: Finding Balance between Life and Music* by Lynn Eustis, *The Inner Game of Music* by Barry Green, *A Soprano on Her Head* by Eloise Ristad and *The Art of Singing* by Jennifer Hamady (a NYSTA member!) and I recommend them to my singers who need their wisdom. These books are certainly not new, but I find rereading them—and not just leaving them on the bookshelf—encourages me to pinpoint ideas for students whose problems are challenging me to find new words, new ideas to help them help themselves, mentally and therefore physically.

Everyone's body chemistry is different. Put any five people in a room together, ask them what, if anything, they take for a headache; you'll get five different answers. Headache remedies are among the mildest things we put in our body, but there is not, and probably never will be, a one-medicine-fits-all cure for that pounding in your head. Likewise, there will never be any one set of recommendations for dealing with the effects of a cold, flu, or any malady that will fit every singer, especially if that performer is continually falling ill.

Yet, just as we tailor the exercises and repertoire we give our students, so must we choose the advice and "prescriptions" we give them for making their way in the world as artists and performing musicians. Part of the responsibility to our students is to give them choices for dealing with stress in helpful, healthful ways, for maintaining a healthy ego, and for retaining or developing an accurate perspective on their talent and their abilities, so they can help *themselves* stay balanced mentally and physically.

"Teach" comes from the Old English *"tæcan: to show, present, point out."* As we keep reading and learning as teachers, we must become better equipped to help our singers by pointing out paths to deal with their personal, physical, and emotional challenges and present them with a steadier track for consistent health and—most important—happiness and, by extension, wonderful singing.

May your pharynx always be moist.

Judith Nicosia

president@nyst.org

MESSAGE FROM THE *Editor*

Dear Colleagues,

Spring is upon us, with many several exciting NYSTA events on the horizon as we swiftly move toward the conclusion of the 2015–2016 season. Please make note of two events in particular: our April 3rd on demand video chat with Dr. Kari Ragan—entitled *A Practical Guide for Working with Voice Disorders*—as well as our April 17th birthday tribute to New York composer Tom Cipullo.

Our first featured article this month is by Ken Bozeman, Frank C. Shattuck Professor of Music at Lawrence University. Professor Bozeman is the author of *Practical Vocal Acoustics: Pedagogic Applications for Teachers and Singers* and is the 1994 winner of the Van Lawrence Fellowship, awarded jointly by the Voice Foundation and NATS. Ken has made a great contribution to our field by applying scientific concepts to the voice studio in a practical and meaningful way. I think you will find his article, "Studio Metaphors for Acoustic Pedagogy," to be a helpful resource in your applied teaching. The second and final part of Marci Rosenberg's article "Training the Hybrid Singer: Application of Exercise Physiology Principles in the Voice Studio" rounds out the issue.

I hope that all of you have survived winter and are looking forward a rich and exciting spring season. As always, VOICE*Prints* is YOUR publication, so please send questions, comments, and suggestions for future articles to me at *voiceprints@nyst.org*.

Sincerely,

Matthew Hoch

Editor-in-Chief, VOICE*Prints*

NYSTA*Calendar 2016*

Tom Cipullo

CONCERT & BIRTHDAY TRIBUTE TO TOM CIPULLO

April 17, 2016, Sunday, 2:00–4:00 PM EDT. *Reception to follow.*

Marc A. Skorca Hall, National Opera Center, 330 Seventh Avenue, New York City

NYSTA is delighted to honor New York composer Tom Cipullo by presenting a full-length concert of his vocal works, chosen by the composer himself and assisted by singers from the New York Metropolitan Area. Hailed by the American Academy of Art & Letters for music that displays "inexhaustible imagination, wit, expressive range and originality," composer Tom Cipullo's works are performed regularly throughout the United States and with increasing frequency internationally. The winner of a 2012 Guggenheim Fellowship, the 2013 Sylvia Goldstein Award from Copland House, and the 2013 Arts & Letters Award from the American Academy, Mr. Cipullo has received commissions from Music of Remembrance, SongFest, Joy in Singing, St. Cecilia Chorus, New York Festival of Song, Mirror Visions Ensemble, Sequitur, Cantori New York, tenor Paul Sperry, mezzo-soprano Mary Ann Hart, Five Boroughs Music Festival, pianist Jeanne Golan, soprano Martha Guth, soprano Hope Hudson, the Walt Whitman Project, baritone Jesse Blumberg, and many others. He has received multiple fellowships from Yaddo, the MacDowell Colony, and the Virginia Center for the Creative Arts, and awards from the Liguria Study Center (Bogliasco, Italy), the Fundacion Valparaiso (Spain), the Oberpfaelzer Künstlerhaus (Bavaria), and ASCAP. *The New York Times* has called his music "intriguing and unconventional."

Other honors include the Minneapolis Pops New Orchestral Repertoire Award (2009) for *Sparkler*, the National Association of Teachers of Singing Art Song Award (2008) for the song-cycle *Of a Certain Age*, and the Phyllis Wattis Prize for song composition from the San Francisco Song Festival for *Drifts & Shadows* (2006). Cipullo's acclaimed opera, *Glory Denied*, was premiered at Fort Worth Opera, and recently released on Albany Records.

Professional Development Program Calendar 2016

DATE—*EST TIME*	*EVENT TYPE*	TITLE—*LOCATION*
2016		
March 9	*ON DEMAND*	Featured On Demand Course: *Singers' Developmental Repertoire*
April 3, *6 PM*	*VIDEO CHAT*	"A Practical Guide for Working with Voice Disorders" with Kari Ragan, DMA—*Online*
May 11	*ON DEMAND*	Featured On Demand Course: *Comparative Pedagogy 2016*

STUDIO METAPHORS *for Acoustic Pedagogy*

by Kenneth Bozeman, MM

Vocal Tract Acoustics

The vocal tract is a quarter wave resonator with multiple natural resonances—that is, frequency peaks at which it is more responsive to input from voice source harmonics. Any harmonics introduced by the vocal folds into the vocal tract that are near those frequency peaks will excite more sympathetic vibration from the air contained in the vocal tract. In other words, source harmonics near vocal tract resonances will be significantly amplified or boosted (resonated) and radiated to the outside world, while harmonics farther away from resonance peaks (in the valleys between peaks) will be suppressed. Effective vocal resonance is about maintaining some of these resonances (the overall location of the entire formant set and of the singer's formant cluster) for timbral consistency by stabilizing the vocal tract length, while tuning the first two resonances—also called the vowel formants—for maximum output. The first (or lower) formant is perceived to be associated more with the vertical pharyngeal column and timbral depth, and the second formant with the oral cavity and vowel definition and clarity. In Western classical technique having some degree of convergence of resonator shape—limited by the vowel and pitch being attempted—improves resonance balance between the high and low frequencies within the timbre and increases beneficial acoustic feedback on the vibrator (vocal folds), improving glottal efficiency.

Though accurate as an explanatory, general framework of what needs to happen, the description just given does not help the student know specifically what to do or how to do it. In seeking idealized resonator shapes, the student faces the challenge of adjusting one part of the vocal tract without inappropriately affecting another part, especially when moving away from habituated speech shapes, as is often necessary in active vowel modification. For example, mouth opening can trigger larynx raising, since both are coupled in the instinctive yell response. Voice teachers must therefore translate their knowledge of effective formant tuning into accurate vocal tract mapping strategies and the most likely subjective kinesthetic perceptions of the singer—in other words, from the spatial arrangements that we know need to happen to what the student needs to think in order to generate those behaviors. A kind of body mapping exercise that has proven helpful in this author's experience follows.

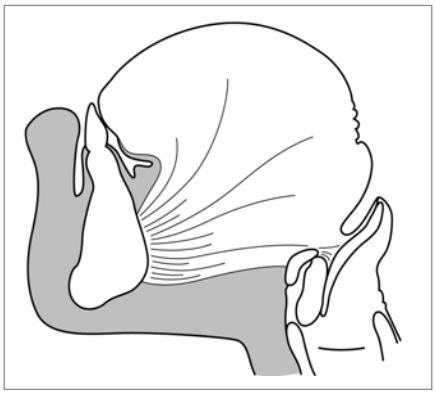
Suggested Two Room Metaphor

The vocal tract is divided into two "rooms" by a tube-narrowing bulge of the tongue toward a location somewhere along the palate. The "back room" is the vertical pharyngeal column, with the glottis as its floor and the soft palate as its ceiling. A narrowing caused by a tongue bulge toward the hard palate creates an inner threshold into a "front room" formed by the oral space extending from that tongue bulge to the teeth and lips. The teeth and lips then form a "front door" to the outside world. With this vocal tract mapping metaphor in place, various directives have proven useful.

Perception Deception

First it should be pointed out that perception can be misleading. A clear example of this involves our perception of the tongue, throat space, and the location of the back of the throat. An open throat is universally recommended for classical *chiaroscuro* timbre. However, what is also seemingly universally perceived as an open throat—the "yawny" /ɑ/—is in fact a throat narrowed by a posterior tongue bulge, and what is felt to be a narrowed throat—the /i/ vowel—is in fact the most open throated vowel posture. The felt location of the back throat wall in a yawny /ɑ/ seems rather far back, somewhere behind the ears, an anatomical impossibility. The actual back throat wall is in front of the ears and cannot be expanded further back (without changing the neck and spinal posture) because the spinal column is there. What we are probably feeling as throat expansion (a false kinesthesia) is the activation of the styloglossus muscles, those lateral tongue muscle strands that course posteriorly to the styloid processes just below and in front of the ear canals and that retract the tongue body into the pharynx. If you attempt a full yawn, you can feel this muscle action toward your ears. Singers should avoid this degree of back sensation in their singing. So, *the distance from front to back should be perceptually short.* A sensation of great length from lips to the back wall—like the sensation of space directly in the back of the mouth toward the spine—is false and evidence of a tongue being retracted into the pharyngeal column, narrowing the throat—perception notwithstanding.

Figure 1: Remapping the Tongue Origin & Shape



Furthermore, the main tongue body is felt to be shaped like an "L" or an angle iron, that lies flat in the mouth and then makes a rounded 90 degree angle down the throat to the larynx, to which it seems attached. While it is true that some outer, lateral portions (hyoglossus) of the tongue muscle complex descend and attach to the hyoid bone, the largest part of the tongue muscle (the genioglossus) folds back under the tongue blade where it originates from the inside back of the chin. Remapping the location of the back of the throat to its actual location in front of the ears, and the tongue body as a folded muscle that attaches to the chin releases the styloglossus and fronts the tongue, increasing pharyngeal space, or opening the throat.

Directives for the Two Room Metaphor

There should always seem to be two rooms for classical timbre, even on the least convergent (i.e., most divergent) vowels. This is accomplished by always having some sense of narrowing between the rooms, that is, of keeping the tongue bulge relatively close to the hard palate. *Keep the threshold between the two rooms as close and high as the vowel and pitch will allow.* This accomplishes enough internal convergence of resonator shape to assist *chiaroscuro* timbre, even when the front room is divergently shaped for the particular vowel. The jaw and tongue should be free, but minimally lowered for open or back vowels. For close vowels, the jaw will need to open sooner with ascending pitch, but the tongue height should remain relatively high. For men this opening of the closest vowels commences well before reaching the pitch of the first formant in order to *avoid* whoop timbre. (Whoop timbre occurs when singing the pitch of the first formant, or when the first formant is tracking the pitch one is singing.) Open vowels can stay in close position rather high. While there should be no sensation of holding or inhibiting the jaw, greater openness is only needed higher in the range for the open vowels. For women, in order to maintain and track whoop timbre, opening commences from the pitch of the first formant of each vowel.

Conversely, if the tongue is lowered too far, especially in the middle voice, the perception will change from two rooms to that of one room, extending from the back wall to the opened mouth. This may be an appropriate strategy for belt timbre, but is not as helpful for classical timbre. The acoustic consequence of a "one room" sensation will tend to be a less gathered, collected and a more "spread" timbral sensation.

Directives for the "Back Room"

The back room should always be tall, with the floor (the larynx) comfortably low and the ceiling (the soft palate) high. This is best accomplished via the use of appropriate affects. A strongly activated affect—such as mischief, pleasure with oneself, suppressed laugh, or strong empathy/pathos—stabilizes the overall vocal tract length and actually opens the throat by fronting the tongue. While the back room contributes to both ring and depth, it is especially responsible for depth of timbre. An appropriately low laryngeal position facilitates ease and efficiency of laryngeal registration across range. In keeping the inner threshold narrow, take care that the back room is not collapsed—it should rather be stretched taller. An alternative image is the inverted megaphone, with the small end at the narrowed threshold and the large open end just in front of the ears.

As explained above, the back room isn't really that far back—it is in front of the ears. When well opened, it feels tall, laterally open, but paradoxically somewhat slender from front to back. Remember that *the sensation of backspace is notoriously false*, and is most likely the sensation of activating the styloglossus—of backing the tongue into the throat. This is easily proven by the noisy inhalation that accompanies that sensation, as well as the cooling wind chill effect precisely where the throat has been narrowed. An open throated inhalation cools the front of the mouth, not the throat.

Perceptual Sense of Self

While a person's emotional center may be seem to be in the thorax (near the heart), one's sense of personal agency is typically located in the center of the head behind the eyes, more or less in the vicinity of the ears, perhaps due to the centers of hearing, sight, and balance. Once the singer is aware of this "place from which" they perceive and interact with the world, they should determine to *"stay in the back room"* just inside the inner threshold (tongue bulge), and not travel out into the front room perceptually. This can be very effective in reinforcing good structural alignment and in avoiding a reaching forward of the face or jaw either for expression, ascending pitch, or changing vowel.

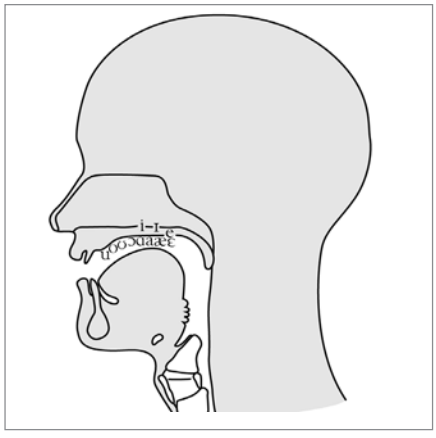
Directives for the "Front Room"

Do not darken the front room. The front room is all about vowel clarity and ring and should be perceived to be in front of the singer's sense of self. The front room is rather like a sunroom—light, clear, and ringing—and should not be used to color, darken, or deepen the tone.

Front Vowels: If the vowel is a tongue-fronted vowel (the so-called front vowels: /i ɪ e ɛ æ a/), the front room can be divergently shaped from the tongue hump forward and feel rather exposed. The perceived vibrational locus of the front vowels is paradoxically at or just behind the threshold between the rooms—in other words just above and/or behind the tongue hump. Since front vowels are situated just inside the vertical back room, with the threshold kept sufficiently high and close, the front room should be relatively divergent for maximal clarity, with no lip rounding over the teeth to warm or darken the timbre.

Back Vowels: When singing a lip rounded back vowel /u o ʊ ɔ/, the mouth should be kept in as close a posture as is comfortable, with the jaw minimally dropped, until the singer has reached the pitch of the first formant for treble voices or well above the pitch of turning for non-treble voices. These back vowels are perceived to vibrate more in the front room on and above the hard palate. It is as if there is a short, small tube in the front room through which the vowel rings. If the oral cavity is sufficiently small, the lips merely form a continuation of the tube's circumference, and needn't round further nor pull down to cover the front teeth. The closeness or convergence of vowel shape is maintained in large part via the strength of the affective posture (pharyngeal grin) that is stabilizing the palatal height and pharyngeal length. In keeping the front room small, take care not to collapse the ceiling height of the back room (the soft palate). Keep a strong inverted megaphone sensation or inner pharyngeal grin affect. Back vowels therefore triangulate somewhat, with a low floor and high ceiling in the back room, plus some forward vibratory sensation on the hard palate in the front room.

Figure 2: Vowel Second Formant "Placement" Sensations



No vowel should seem to be directed toward the back wall. Even the front vowels, which vibrate near the top of the back room just inside the tongue hump, should stay close to that threshold. And back vowels, though also needing a tall back room, should have a primary vibrational locus on the hard palate of the front room. The vowel /ɑ/, with its inherent divergence, challenges the two room perception. The tongue bulge should be kept as close to /i/ as is feasible, with back and front rooms as open as that narrowing will allow. A resonant /ɑ/ will seem to vibrate in the threshold, between the tongue hump and the palate, and may sound modified toward a ringing /ʌ/, especially to the singer. Similarly, with ascending pitch all vowels will seem to migrate and deepen in the singer's perception toward the timbral quality of the first formant. With these adjustments, *all vowels can seem fairly close together*, especially in the lower and middle voice.

Strength of the Pharyngeal/Laryngeal Affect

Keep the pharyngeal affect strong. The degree of the affective muscle action that stabilizes the pharynx and larynx can be rather strong. Like yawning, it can do no harm, no matter how strongly activated, since it is self-limiting, but it is preferable to the yawn for resonator tuning. The pharyngeal affect should not be relaxed for softer or higher sounds, rather should be stronger. Affective poise of the vocal tract is typical and instinctive in strong spontaneous expressions. This stabilizing use of affect helps to keep the throat open and the resonator convergent, and to gather or collect the sound sensation, creating the perception of acoustic narrowing or "closing" through the *zona di passaggio*. It does not result in a tight or constricted sensation—rather a strongly expressive, possibly even firm poise. It is a satisfying, communicative sensation, not a laborious, unpleasant one.

Vowel Modification

As harmonics approach and cross the first formant, there is inevitable *passive* vowel modification or migration. This occurs with *no shape change*. When it becomes necessary to open the mouth or jaw further (either to avoid whoop timbre in men, or to track whoop timbre in treble voices), the vowel is then being *actively* modified. Men need active modification primarily for the close vowels /i y u/, and occasionally mid-close vowels such as /ɪ e ʊ o/, since they do not sing pitches as high as the first formants of open vowels. More often, however, males need to allow the passive vowel migrations that occur with pitch ascent and *stable* vocal tract shapes, especially at the change from open to close timbre, where the second harmonic rises through the first formant.

Keeping the vocal tract shape the same is easier said than done, since its shape is normally guided by our concept of the vowel sound. As we hear the vowel passively migrating, we instinctively want to counteract and fix it by opening the vowel, which can trigger laryngeal elevation and throat narrowing. It is helpful to be very familiar with the predictable passive vowel migrations that occur with pitch ascent in order to allow them to occur without shape adjustment.

For treble voices (females and countertenors), as the sung pitch approaches the first formant, the vowel will passively modify/migrate as it achieves whoop timbre. This modification is often instinctively yet inappropriately avoided by vowel opening and throat narrowing. However, for example, if a soprano keeps the vowel shape sufficiently close, an /o/ will gradually migrate toward an /u/ starting at about A4 and arriving at about C5. This should be encouraged in order to maintain a truly open throat. Treble singers are usually surprised at how what sounds to them like an /u/ is still a convincing, if close /o/ to the external audience. Most vowel migrations sound more modified to the singer than to an external listener.

TYPICAL STUDENT ERRORS

Relaxing/Collapsing the Pharyngeal Affect

This typically causes a lowering of the sensation of tonal "placement" from on and above the palate to lower in the mouth. It can also cause the soft palate to droop. This often occurs when attempting softer dynamics, when moving from a front vowel to a back vowel, and with upward leaps. It can also occur that in the attempt to keep the inner threshold sufficiently close, both pharyngeal affect and tallness, and front room divergence are collapsed. A change in facial expression either toward neutral/deadpan or eyebrow raising introspection often accompanies this collapse of affect and inner laxity, as does a subtle tipping up of the head away from level.

Moving into the Front Room

The perception of personal agency moving forward into the front room typically accompanies a lowering of the tongue hump and some degree of movement of the face up and forward. This error typical of back vowels (whose vibrational locus should be felt on the hard palate in the front room) can create the perception that one is changing places with the vowel: if the singer's center of agency moves to the front room, the vowel moves to the back room.

Creating One Perceptual Room

This also occurs by dropping the tongue bulge so much that the vocal tract feels like one divergently shaped room, narrow at the back and open in the mouth (whether or not the lips are rounding). A divergently shaped resonator—depending upon how it is done—is a more appropriate acoustic strategy for styles related to belting. This behavior also can collapse the palate and move the singer's self-perception forward from the back room. With lip-rounded vowels a one-room perception creates a large, hollowed oral sensation, accompanied by excessive lip rounding to cover the upper teeth, which reduces ring.

Under Opening Close Vowels

Close vowels need to be opened earlier (lower), before the sung pitch reaches the first formant to avoid whoop timbre and retain virile timbre for men, or from the first formant on up to maintain whoop timbre for women where the first formant tracks the sung pitch. Paradoxically, in order to be resonant, the close tongue vowels—especially /i/—will need to be *more* opened by the jaw than an open vowel such as /ɑ/ in the upper middle and upper voice. However, though the jaw opens further, the tongue bulge should remain high, the larynx low, and the inner threshold narrow to preserve the vowel identity and timbral depth.

Over Opening Open Vowels

Open vowels can stay in close posture until the sung pitch reaches the pitch of the first formant, especially for treble voices. Males (other than countertenors) don't reach the pitch of the first formants of the open vowels, but may open vowels above the turn in order to tune the second formant to a higher harmonic. Treble voices only reach the first formant of open vowels near the top of the treble clef.

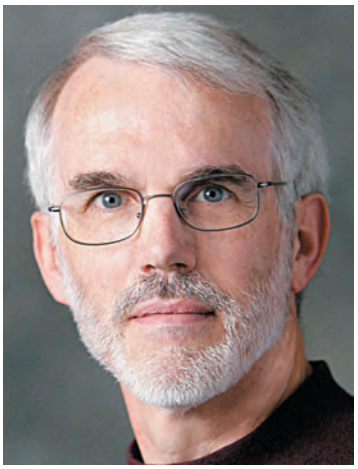
Darkening the Front Room

Insufficient divergence, by not opening the jaw enough when appropriate, not getting the lips out of the way, covering the teeth with the lips, enlarging and hollowing the mouth/front room, or by retracting the tongue tip—can reduce the ring of the sound or interfere with better formant tuning, reducing overall resonance. For lip rounded vowels in the lower and middle voice, keep the mouth space small (short, small tube), the acoustic sensation high on the palate, and use minimal lip rounding. The "placement" perception of lip-rounded vowels is kept higher on the palate with sufficient affective motivation, such as mischief,

amusement, or being pleased with oneself. For non-lip rounded vowels, don't lip round. For these the lip muscles are passive, and are shaped instead by the expression on the face, which should almost never be a deadpan droop. Rather, the facial expression should reflect some sincere, even if light, expressive motivation. We are not programmed to make expressive, resonant sound from lax, deadpan motivation.

Conclusion

Training the tuning of the vocal tract for best resonance for each vowel across all pitches of the range poses pedagogic challenges. Not the least of these challenges is how best to motivate vocal tract shapes that yield acoustically necessary, nuanced vowel migrations or active modifications not previously experienced. The "two room" metaphor has proven to be a body mapping exercise that effectively helps students sort and shape the various components of the vocal tract for improved resonance.



The students of **Kenneth Bozeman**, *MM, have sung with opera companies including Houston Grand, Boston Lyric, Opera Colorado, Washington, Wolf Trap, Seattle, Deutsche Oper Berlin, New York City, San Francisco, the Metropolitan, and Santa Fe. He has both been a frequent presenter at voice science conferences and universities, and written several articles on the topics of voice acoustics, especially as applied to male* passaggio *training (*Choral Journal, Journal of Singing, Logopedics Phoniatrics Vocology*) and a book,* Practical Vocal Acoustics: Pedagogic Applications for Teachers and Singers. *Past presentations on vocal acoustic pedagogy include the 2012 and 2014 NATS conventions, the 2014 Winter Workshop, a 2016 online NATS Chat, and frequent lecture demonstrations for universities and local NATS chapters. He was a master teacher for the 2013 NATS Intern program.*
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TRAINING THE HYBRID SINGER: *Application of Exercise Physiology Principles in the Voice Studio* by Marci Daniels Rosenberg, MS, CCC-SLP

NOTE: This is the second of a two-part article for VOICEPrints.

In the first installment of this article, the basic concepts of athletic training were introduced in terms of how these principles might be applied when training the hybrid singer. In *The Vocal Athlete* the term *hybrid singer* is defined as "the vocal athlete who is highly skilled performing in multiple vocal styles possessing a solid vocal technique that is responsive, adaptable, and agile in order to meet demands of current and ever-evolving vocal music industry genres."[1] It is known that the contemporary commercial music (CCM) singer must indeed be hybrid in nature in order to adapt to industry demands in a time when composers continue to push the envelope of vocal athleticism. The challenge of the singer and teacher of these styles is to establish a strong technical foundation in order to meet these demands in a healthy way. This allows the singer to not only honor the appropriate musical style, but also maintain vocal health and longevity in a competitive, ever-changing industry.

Ultimately, the goal with any style of singing is to produce the desired vocal quality in a manner that is healthy, using principles that elite athletes have used for many years to avoid injury. This approach to vocal training has been referred to as functional training.[2] In the introductory article, several exercise physiology principles were briefly introduced and discussed. The purpose of this follow-up article is to further introduce how we might structure vocal training for maximizing technical benefit, to promote vocal health and longevity, and to potentially identify red flags that could indicate emergence of problems.

Most of the exercises highlighted in this article are taken from *The Vocal Athlete* companion book entitled *The Vocal Athlete: Application and Technique for the Hybrid Singer*.[3] However, there are certainly numerous other sources for voice exercises and several are probably already used in your studio. The selected exercises represent a small sampling of any number of voice exercises you as a teacher would be likely to employ when teaching. The exercise itself holds no magic; rather, it is the intent behind the exercise that must be firmly understood in order for the full benefit to be realized. There are often numerous solutions to a technical vocal problem. It is the teacher's challenge to provide the exercise that will address and correct the technical issue. It is at this level of understanding that the art of voice pedagogy transcends the biomechanics and science and becomes a craft. Both facets must be inherently understood and interwoven in order to make true progress. If the chosen exercise does not yield the desired result after reasonable trial, other avenues and exercises must be explored. A single exercise can often be used to address numerous issues, allowing for efficient use of limited studio time. This author emphasizes that *no vocal exercise should cause excess strain or discomfort.* Open dialogue between student and teacher is critical to help identify red flags before they become long-term problems. Decrease in vocal ability for longer than two weeks in the absence of an obvious illness requires a laryngeal examination by a laryngologist.

Vocal Warm-Up and Cool Down

We know that vocal warm-ups are useful to prepare the instrument for active training or use, because they help increase oxygen and blood flow to the muscle fibers, promoting flexibility and range of motion. Vocal warm-ups are also very useful as a vocal calibrator during the day by helping to improve vocal fold vibration. Vocal cool down exercises can be essentially the same exercise. However, they should be viewed as a neutralizing gesture to return to the active muscles into a neutral state after active use. Below are several exercises that were chosen as both effective warm-ups and cool downs.

1. The motor boat (a tongue trill with a protruded, relaxed tongue) described by Caroline Helton and lip trill described by Norman Spivey both engage the breath and create a semi-occluded vocal tract (SOVT) (see additional reading resources on this topic below).[4] The lip trill has the added benefit of relaxing the lip and facial musculature, while the motorboat also promotes coordination of breath and sound with relaxation of the tongue. Only moderate volume is necessary, and any simple scale is effective. The starting range should be chosen based on voice type. As a general rule, start where the singer is comfortable and successful and take the exercise from there. Covering the singer's full vocal range and vocal registers is important when warming up. Lip and tongue trills tend to allow for easier access into the higher range.

2. Straw phonation and cup phonation also provide a semi–occluded vocal tract. These serve as excellent vocal warm-ups, vocal calibrators, and cool-down exercises. Both of these exercises would most commonly be initiated in the middle range. Straw phonation offers more resistance so there is a greater occlusive effect. To execute straw phonation, the singer phonates through a straw focusing on achieving maximum buzz and vibration behind the teeth and on the front of the face. Typically, the singer executes simple pitch glides ascending and then descending in the midrange. The amount of vibration should remain stable throughout the entire task as well as the air flow coming through the straw. There is no nasal airflow for this exercise.

The cup exercise—also called "cup phonation"—involves placing a pencil diameter hole on the bottom center of the cup and sealing the mouth with the open side while generating sound.[5] The tactile goal is vibration inside the cup and in front of the face. Cup phonation also offers an occlusive affect with the added ability to use connected speech and singing into the cup. Similarly, cup phonation serves as a great warm-up and cool down but also serves as a tool to help strengthen and coordinate the voice. The use of a cup allows the singer to achieve the benefits of a semi-occluded vocal tract with the added ability to execute connected speech and singing into the cup, something that cannot be achieved with a straw.

3. Renee Gottliebson described an effective cool down exercise that helps to return the vocal musculature to a neutral setting after active use.[6] This sequence of exercises are based off of the work of Arthur Lessac and unfolds in three parts. Part 1 focuses on reducing collected tension and recalibrating vocal pitch for speech. She also uses a lip trill in a comfortable pitch range on a five note descending scale. Part 2 incorpor-

ates a relaxed breathing exercise with a yawn posture to stretch the laryngeal position and pharyngeal space. Part 3 uses a focused, resonant hum with forward placement, followed by a series of [m] and [n] phrases, and finally chanting to finish off the cool down series. The goal of this and all cool down exercises is to help return the vocal musculature to its "default" setting.

Laryngeal Strength and Coordination: Train Versus Strain

Flexibility, strength, and endurance are critical for all styles of singing and certainly serve to anchor a solid technique for CCM styles. Regardless of the vocal style a singer most commonly uses, strength and stamina in both head and chest registers are important to maintain a balanced vocal mechanism. As with previous sections, there are numerous correct and efficient ways to approach this. The previous article introduced five exercise physiology principles. To briefly review, they are intensity, frequency, overload, specificity, and reversibility. The first three principles ensure that the musculature will be adequately "taxed" so that the appropriate muscle fiber changes occur, resulting in increased strength. To use an athletic analogy, if an athlete wants to ultimately bench press 50 pounds, he or she cannot simply pick up a 50-pound weight. Rather, the muscles must be developed slowly and safely in order to sustain this kind of activity without injury. The athlete would begin with the amount of weight that he can safely tolerate, and slowly add weight as strength builds over time. Eventually the muscle fibers will adapt to these new demands. This is referred to as specific adaptation to imposed demand (or, the SAID principle).

In voice training terms, weight is equivalent to volume. In order to strengthen, the singer needs to determine the threshold "just above comfortable" and work in that range and volume for short periods of time until that threshold shifts. Volume and range can both be slowly built in. There are currently no significant studies demonstrating the direct application of exercise physiology principles to the voice. However, we observe and experience these correlations on a daily basis with our students and our own voices. Teachers must take into account each student's needs and response to this training. A general guideline would be to start in a range that is comfortable and build in the volume to a level where the student feels slightly above their comfort level and work in that area for short period of time switching to the opposite register in order to maintain balance. Feeling as if the voice as had bit of a workout would not be entirely surprising as long as recovery is quick (returning to normal feeling voice after about 15–30 minutes as a general guideline). If the singer is ex-periencing notable voice fatigue afterward, then the "weight was too heavy," and the teacher should modify the exercise, either by reducing range volume or length of time. Remember that vocal fitness, like physical fitness, takes time and doesn't happen within one or two sessions. Pacing and patience are critical for success. Consistent fatigue or change in vocal quality or vocal range is always a red flag.

It is important for the student to understand the difference between train and strain. This is sometimes harder for a less experienced singer to understand and identify, attention to immediate recovery time after training is a good place to start. The teacher should help monitor this until the student feels confident that he or she is able to tell the difference. Taking the time to establish a student's perceived exertion early on as self-monitoring is a very important part of vocal training. The Scale of Vocal Effort—or SOVE—is described in *Vocal Athlete: Application and Technique for the Hybrid Singer* as "a means of establishing an internal kinesthetic reference for perceived effort during a given vocal task."[7] The student is asked to assign the level of perceived effort a number from one to ten, with ten representing extreme strain and effort and zero being no effort (at rest). Three to four is medium effort and six to seven is high effort. As the student becomes comfortable assessing this, he or she can proceed with confidence when training. Additionally, if a known vocal task (i.e. a certain passage in a song) suddenly has a higher SOVE, that could be an indication that there is a problem (illness, possible emerging problem). Implementing an internal monitoring system will make the student a smarter and more independent singer.

Conclusion

Voice production is a complex series of tasks involving numerous systems in the body. Vocal training can be viewed as an athletic endeavor and training in a manner that employs exercise physiology principals to maximize strength and coordination could both improve vocal strength coordination and stamina while minimize risk of injury. There are numerous exercises which can be employed to train the voice. The teacher must have a clear intention behind the chosen exercises in order to maximize benefit. Additionally, establishing a kinesthetic reference for level of effort will help the singer differentiate between train and strain promoting vocal health and longevity while fostering independence as a singer.

ADDITIONAL READING AND RESOURCES

M. Daniels Rosenberg, "Using Semi-Occluded Vocal Tract Exercises in Voice Therapy: The Voice Clinician's Primer." *Perspectives on Voice and Voice Disorders* 24.2, July 2014.

M. Daniels Rosenberg, "Training the Hybrid Singer." *Music Theater Magazine,* May 2014.

M. Daniels Rosenberg, "Wave in a Cave." *Exercises for Voice Therapy*. Second Edition. Edited by Alison Behrman and John Haskell. San Diego, CA: Plural Publishing, 2013.

M. Daniels Rosenberg, "Nuts and Bolts of Semi-Occluded Vocal Tract Exercises in Voice Therapy: The Why, When and How." *eHearsay*, 3.2 (2013), 55–58.

R. DeFatta and R. T. Sataloff, "The Value of Vocal Warm-Up and Cool-Down Exercises: Questions and Controversies." *Journal of Singing* 69.2 (2012), 173–175.

N. Elliot, J. Sundberg, and P. Gramming, "What Happens during Vocal Warm-Up?" *Journal of Voice* 9.1 (1995), 37–44.

A. Gish, M. Kunduk, L. Sims, and A. McWhorter, "Vocal Warm-Up Practices and Perceptions in Vocalists: A Pilot Survey." *Journal of Voice* 26.1 (2012), 1–10.

R. Gottliebson, "The Efficacy of Cool-Down Exercises in the Practice Regimen of Elite Singers." Dissertation, University of Cincinnati, 2011.

A. Lessac, *The Use and Training of the Human Voice: A Practical Approach to Speech and Voice Dynamics*. Third Edition. Santa Monica, CA: McGraw-Hill Publishing, 1997.

S. Powers and E. Howley, *Exercise Physiology: Theory and Application to Fitness and Performance.* Ninth Edition. Boston, MA: McGraw Hill, 2014.

M. Safran, A. Seaber, and W. Garrett, "Warm-Up and Muscular Injury Prevention: An Update." *Sports Medicine* 8.4 (1989), 239–249

M. Sandage and D. Pascoe, "Translating Exercise Science into Voice Care." *Perspectives on Voice and Voice Disorders* 20.3 (2010), 84–89.

I. Titze, "Voice Training and Therapy with a Semi-Occluded Vocal Tract: Rationale and Scientific Underpinnings." *Journal of Speech, Language, and Hearing Research*, 49 (2006), 448–459.

FOOTNOTES

[1] W. Leborgne and M. Rosenberg, *The Vocal Athlete* (San Diego, CA: Plural Publishing, 2014), xiii.

[2] J. LoVetri, "The Necessity of Using Functional Training in the Independent Studio," *The Journal of Voice*, 70.1 (2013), 79–86.

[3] M. Rosenberg and W. LeBorgne, *The Vocal Athlete: Application and Technique for the Hybrid Singer* (San Diego, CA: Plural Publishing, 2014).

[4] M. Rosenberg and W. LeBorgne, *The Vocal Athlete: Application and Technique for the Hybrid Singer* (San Diego, CA: Plural Publishing, 2014), 61-63.

[5] M. Rosenberg and W. LeBorgne, *The Vocal Athlete: Application and Technique for the Hybrid Singer* (San Diego, CA: Plural Publishing, 2014) 76–77.

[6] M. Rosenberg and W. LeBorgne, *The Vocal Athlete: Application and Technique for the Hybrid Singer* (San Diego, CA: Plural Publishing, 2014), 69–70.

[7] M. Rosenberg and W. LeBorgne, *The Vocal Athlete: Application and Technique for the Hybrid Singer* (San Diego, CA: Plural Publishing, 2014), 11–12.

Marci Daniels Rosenberg, *BM, MS, CCC-SLP, is a singer and a licensed speech-language pathologist/research investigator at the Vocal Health Center of the University of Michigan. A voice and singing specialist, she works clinically to rehabilitate injured voices. After completing her undergraduate degrees in vocal performance and speech pathology, Ms. Rosenberg was a research fellow in the Voice and Speech Lab at the National Institute on Deafness and Other Communication Disorders before finishing her graduate degree in speech language pathology. She actively teaches workshops and lectures nationally on vocal health, performance voice, managing vocal injuries, and application of kinesiology principals to voice therapy. She co-chaired the inaugural international voice conference "Multidisciplinary Rehabilitation of the Performance Voice" in 2010. Ms. Rosenberg has served on the faculty of the Contemporary Commercial Music Institute at Shenandoah Conservatory since 2010 and will be a featured guest speaker this summer. She is co-author (with Wendy LeBorgne) of the newly published singing science textbook* The Vocal Athlete *and its companion volume* The Vocal Athlete: Application and Technique for the Hybrid Singer *(Plural Publishing, 2014). In additional to her clinical activities, Ms. Rosenberg performs and maintains a private voice studio in the Ann Arbor area.*

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VIDEO CHAT:

A Practical Guide for Working with Voice Disorders

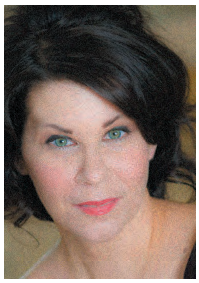
with Kari Ragan, DMA

APRIL 3

Sunday, 6:00 PM EST

Live Online

There are a variety of successful models for working on a voice team to habilitate singers with voice injuries. As both a full-time voice faculty member at the University of Washington and an independent teacher, Dr. Kari Ragan has structured a collaborative system for working as a Singing Voice Specialist (SVS). What fundamental understanding should all voice teachers have when experiencing a singer with a voice disorder? Understanding what to listen for within the speaking and singing voice is crucial to teachers who are on the front line of vocal health. Learn concrete steps you can take to design a protocol to help habilitate the singing voice and gain more understanding in the special approach required for each lesson with regard to vocalizes and repertoire.



***Dr. Kari Ragan**, soprano, earned her DMA degree in 2005 from the University of Washington. Her dissertation,* The Ballad of Baby Doe: Historical Accuracy and Gender Ideology in the Characterization of Augusta and Baby Doe, *focused on feminist perspective of Douglas Moore's 1956 opera. Dr. Ragan earned her BM (1987) and MM (1991) degrees in vocal performance at Indiana University. She is a member of the University of Washington voice faculty where she teaches applied voice, voice pedagogy, Italian diction and French art song literature and serves on the advisory board of the newly developed musical theater degree program. She has maintained a thriving and collaborative independent voice studio for over thirty years, teaching professional and avocational singers as well as habilitating injured singers. Although her primary training, performing, and teaching is in the classical genre, she also specializes in contemporary musical theater pedagogy.*

Dr. Ragan is a recipient of the 2012 Van Lawrence Fellowship. This prestigious award is presented jointly by the Voice Foundation and NATS. Her research for this fellowship, which will soon be published, was "The Impact of Vocal Cool-Down Exercises: A Subjective Study of Singers' and Listeners' Perceptions." Among other awards and honors, she was the recipient of the NATS Voice Pedagogy Award in 2009, NYSTA's Distinguished Voice Professional certificate in 2010, and the Wicklund Singing Voice Specialist certificate in 2011. For over a decade, Dr. Ragan has worked as a Singing Voice Specialist (SVS). She has presented at the Voice Foundation Symposium, the NATS national conference, and the National Center for Voice and Speech (NCVS), is an organizing member of the Northwest Chapter of the Voice Foundation (NWCVF), the coordinator and host of the NATS Chats program, and a charter member of the Pan-American Vocology Association (PAVA).

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