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The Voice

The Voice

VOICE OF THE EDITOR

Mary Sandage, PhD

Clinical Pearls

Specific Aspects of Voice Care in Special Populations

By Mary Sandage, PhD

Clinicians often gear therapy or voice habilitation toward what is perceived as the most helpful intervention to address particular vocal function issues. In many cases, clinicians specialize in a particular type of client, further honing their expertise for that population. Over time, clinical wisdom develops and I, for one, appreciate learning these focused approaches born from extensive experience.

In this issue, themed *Clinical Pearls*, I have invited three highly experience, esteemed clinicians to write on a topic about which they have passion and clinical wisdom. We have so much to learn from the experience of others. These three contributors speak to specific aspects of voice care in special populations. Sarah Schneider, focuses her attention on the role of tongue tension in the context of vocal tract tuning and resonance. Aging voice is expertly addressed by Edie Hapner and Jenny Muckala proposes a clinical framework to consider when working with the commercial voice artist.

We round out this issue with a piece from our fourth contributor, Derek Isetti, who provides an update on voice disorders in the realm of disability. His focused approach to this vexing issue provides resources for further study of this often frustrating aspect of care for those with debilitating voice impairment.

VOICE OF THE EDITOR

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In This Issue:

Voice of the Editor

EXCESSIVE TONGUE TENSION

HOW IT DEVELOPS, WHY IT PERSISTS (AND SOME TIPS AND TECHNIQUES)

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Tongue tension is often discussed. There are many opinions (just do a Google search) on how tongue tension develops and why it persists. However, there is little or no empirical research on this topic and its manifestations. This article offers a framework in which to think about the development of excessive tongue tension in addition to techniques for evaluation of tension patterns and tips for assessing a person's stimulability to alter tension to affect voice production.

A mute, in musical terms, is a device attached to or inserted into a musical instrument to dampen or alter the sound. This may affect the timbre, decrease the volume, or both. The tongue plays a crucial role in filtering vocal sound by shaping the vocal tract, thereby altering formant frequencies. This will result in amplification or attenuation of certain harmonics. From a voice rehabilitation perspective the tongue often starts as a mute. Excessive tension alters formant frequencies and dampens sound output.

Tight musculature in the suprahyoid and submental region, at rest and/or with phonation, is an indicator of inefficient tongue tension. Chronic or excessive tension may lead to tenderness on palpation. The degree of tenderness may indicate the degree and frequency of muscle activation. Some amount of tongue muscle activation must take place to create vowels and achieve vocal tracts shapes that result in desired resonance (for speaking, various genres of singing). The key is to assess how much muscle activation is most efficient to maximize vocal output, minimize effort, and achieve stamina.

In 2015, a systematic review identified 5 primary clinical methods of peri-laryngeal palpation used to identify patterns of tension and tenderness (Koddami). Various rating systems of tension and tenderness were identified. Tongue tension was assessed around the hyoid bone and suprahyoid/submental region at rest and during phonation. The position of the hyoid bone, task specific muscle activation, muscle rigidity, and tenderness were identified. Outside of the literature on peri-laryngeal muscle assessment and massage, there is little in the way of describing patterns of tongue tension, their effects on sound quality, visualization of the larynx during examination, or the feelings a voice user experiences during voice production (i.e. increased pressure, feeling sound in the back of the mouth or throat, vocal fatigue, etc.).

A mute helps create a distinctive sound from a trumpet – softer, tinny, etc., depending on the characteristics of the mute. These changes are created primarily by the mute acting on the filter, not at the source. A brass player, when using a mute, feels increased sense of effort to achieve sound output. In a similar manner, singers with excessive tongue tension often report increased sense of vocal effort.

The tongue can help create a distinctive sound – think 'Kermit the Frog here'. Tongue retraction and depression lead to altered phar-

EXCESSIVE TONGUE TENSION, CONTINUED

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yngeal space and laryngeal positioning. When the tongue is playing an increased role in resonance patterns, the sound created can be unique, and it is dampened. As a result, the voice user may increase subglottic pressure at the sound source, resulting in increased shearing forces on the vocal folds during vibration and likely increased muscle fatigue from hyperactivation. The dampened sound may be valuable to a voice over artist who uses amplification however may lead to trouble in a classical singer who must amplify the formant frequencies to be heard over an orchestra.

It is likely that tongue tension alters glottic configuration and possibly vocal fold vibration patterns. It may be that excessive tongue engagement leads to supraglottic squeezing, either anterior-posterior or lateral. This, in turn effects vocal fold closure patterns by possibly increasing closure in shape and/or length of closure time. Alternatively, it could be the altered shape of the vocal tract, due to excessive tongue tension, and the perception of the ensuing resonance leads to increased muscle activation and subglottic pressure to amplify the sound. There are no scientific models to support this.

Evaluation Considerations-

Perceptual assessment

In addition to the standard audio-perceptual evaluation using CAPE-V stimuli and parameters, airflow and the 'location of resonance' during phonation can be described. By identifying airflow patterns during voice production and where sound is resonating, we can begin to formulate thoughts on vocal fold vibratory patterns, a picture of the shape of the vocal tract, and possibilities for change.

Laryngeal palpation

As mentioned, there are various methods of completing laryngeal palpation. Patterns of activation of the suprahyoid/submental regions can give insight into the role of excessive tongue tension in voice production. For example, the hyoglossus should not be activated during production of a /i/ vowel (MacNeilage and Sholes, 1964). Commonly a pattern of overactivation in the suprahyoid region during /i/ is observed. Providing digital manipulation or counter pressure on the tight musculature, during phonation, may elicit a change in resonance and overall voice production. Therefore, indicating stimulability for change and increasing awareness of tension patterns.

Laryngeal Examination

Tongue protrusion during rigid endoscopy elicits a non-habitual pattern for the tongue and may not feel 'normal' for patients. When the tongue is held during examination

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"The key is to assess how much muscle activation is most efficient to maximize vocal output, minimize effort, and achieve stamina."

EXCESSIVE TONGUE TENSION, CONTINUED

and the patient is asked to phonate, we may observe more efficient airflow resulting in smoother voice production (increased regularity of vocal fold vibration) or conversely the inability to phonate. These patterns are clinically relevant and helpful in assessing stimulability for change.

Conclusion

This article offers a framework to examine excessive tongue tension. Many questions remain related to excessive tongue tension and the cascade of physiologic, acoustic, and aerodynamic changes that may take place during voice production. As voice clinicians, we must consider these factors when putting together the pieces of the clinical puzzle. There is much to be learned - as collaborators from many vocal disciplines, we have the opportunity to explore scientific models and engage in research to significantly advance our knowledge of excessive tongue tension and its impact on voice.

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CONSIDER *A LIFE WELL LIVED* IN AGING VOICE

By Edie Hapner, PhD, CCC-SLP

Søren Kierkegaard[1], famed religious philosopher wrote, "Life can only be understood backwards; but must be lived forward" while famed thought leader, Steven Jobs[2] brought this quote into the present by saying, "You can't connect the dots looking forward; you can only connect them looking backwards…" But do we as clinicians consider *a life well lived* when assessing the voice characteristics of our patients with presbyphonia? Oates[3] notes that the changes in vocal effectiveness in aging voice are likely multifactorial and are inclusive of medical and psychosocial conditions common in aging. But, do we consider any of these conditions in our clinics and in our research?

Aging and Longevity

With the exponential increase in the number of people living into their 70's, 80's, 90's and even centurions, actuarial scientists are looking into factors that predict longevity. Actuarial studies have found that early-life events and conditions may have a significant and long-lasting effect on survival to advanced age. One theory, the high initial damage load (HIDL), suggests that early developmental factors can produce differential loads of systemic damage that are highly predictive of the amount and speed of subsequent age related deterioration.[4] In a seminal paper on the HIDL, the authors propose that attention to early life events may mitigate some later life deterioration and even disease.

Little Studied Factors in Aging Voice

Are there factors that we are missing in our aging voice studies that may help us predict longevity of vocal fitness in aging? Are there HIDL factors that we should examine? Three factors that are rarely mentioned in studies on presbyphonia are overall respiratory competence, vocal fold pliability, and overall frailty. Many studies in aging voice assume normal respiratory health, make no reference to the level of overall frailty of the study participants, and document only a vocal fold gap with prominent vocal processes with no reference to overall pliability.

Respiration and Aging

In a recent volume of *The Voice*, Ziegler, Helou and Gillespie[5], in their compelling explanation of the

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WHAT IS

PRESBYPHONIA?

"Presbyphonia is a term used to describe structural changes of the larynx caused by aging, which may account for voice alterations as a person gets older."

CONSIDER *A LIFE WELL LIVED* IN AGING VOICE, CONTINUED

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synergies of the respiratory/phonatory systems, note that most studies assume healthy lungs. They go on to point out that respiratory diseases affect millions of Americans and that when lower airway diseases are present, there may be a competition between the ventilatory needs for respiration verses the phonatory needs.

Chronic obstructive pulmonary disease (COPD) is defined as a chronic debilitating respiratory disease that contributes to muscle wasting, malnutrition, depression, and reduced quality of life more often seen in aged adults.[6] COPD is believed to be a result of a history of smoking. Changes in respiratory drive and capacity in COPD result from tissue inflammation and reduced immunologic response. Interestingly, aging results in an exaggerated inflammatory response of the tissue and reduced immunologic response with resulting changes in airspace dilatation and loss of supporting tissue. In aging, these changes, similar to COPD, are called senile emphysema and represent anatomical and physiological changes that reduce respiratory volume and expiratory force. A recent study is one of the few studies in aging to examine the relationship between COPD and presbyphonia. COPD was amongst the variables significantly associated with the presence of dysphonia in adults over the age of 65 years.[7] Pulmonary function studies are needed to confirm the diagnosis of COPD in the elderly and to gauge its severity. However, there remains quite a bit of controversy in the American Thoracic Society about the validity of FEV^1/FVC and many older adults are actually under diagnosed by their physicians.

> "Actuarial studies have found that early-life events and conditions may have a significant and long-lasting effect on survival to advanced age."

Vocal Fold Pliability and Aging

Vocal fold scar is a complex molecular process leading to fibrosis of the lamina propria.[8] Scar is a result of trauma or injury causing loss of pliability of the lamina propria resulting in vocal fold stiffness and glottal incompetence. **The Voice Foundation's educational webpages (www.voicefoundation.org/health-science/voice-disorders/voice-disorders/vocal-fold-scarring) note that vocal fold scar is from "wear-and-tear" stress on the vocal folds during:**

•Demanding voice use (by preachers, singers, teachers, etc.)

•Voice use over time (aging)

•Voice misuse (poor singing technique, forceful speaking)

•Voice abuse (loud screaming)

Few studies in presbyphonia address the presence or severity of vocal fold scarring when discussing glottal appearance. Prominent vocal processes, thinning of the lamina propria, and a glottal gap are the most often identified signs of presbylaryngeus. The presence and extent of scarring will impact the outcome of treatment whether behavioral intervention, vocal fold augmentation, or bilateral thyroplasty. Being aware of the impact that vocal fold scarring has on the perceived quality of voice and vocal effort and vocal fatigue, will certainly improve the clinician's ability to develop a prognosis for improvement and assist with developing realistic patient expectations of outcomes.

Aging and Frailty

Aging and frailty have commonalities in that both involve a biological vulnerability to stressors with decreased physiological reserves limiting the ability to maintain homeostasis. Frailty is a distinct concept from aging but results in a greater decline and less ability to maintain homeostasis and has been linked to increased falls, disability, hospitalization, and mortality in aging. Frailty can be measured

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with validated indices. There are several indices for measuring frailty but common amongst them is the presence of unintentional weight loss (10 lbs. in past year), self-reported exhaustion, weakness (grip strength), slow walking speed, and low physical activity. Several authors in the voice literature reference frailty but few actually measure its impact on outcomes or use indices as predictive measures.

Summary

In summary, more and more attention is being paid to our aging population and the impact on workforce dynamics and healthcare expenditures. Voice scientists are paying attention to aging voice but continue to describe normal aging voice and aging voice that is marked by earlier life vocal events as a homogenous group. Just as we start to pay attention to the differences between chronological age and biological age in other areas of aging research, let's remember to consider the impact of *a life well lived* on vocal longevity and treatment outcomes both in our clinics and our labs.

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"Let's remember to consider the impact of *a life well lived* on vocal longevity and treatment outcomes."

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2016 SYMPOSIUM AWARD DEADLINES

YOUNG INVESTIGATORS SATALOFF AWARD

The Sataloff Award for Young Investigators, co-sponsored by Elsevier and The Voice Foundation, recognizes excellence among young researchers. The first Annual Sataloff Award was presented in 2009. This award is open to investigators who completed their training (including fellowship) no more than five years ago. *Investigators must present **new research** for publication in Journal of Voice.*
2015 Winner was **Stephanie Misono, MD**

Submit your abstract for presentation (oral or poster) in the upcoming symposium. Submission deadline is October 31. (DEADLINE PAST). The nominees must **self-nominate** with a **Letter of Intent** to the committee **by January 15th.**

Send your letter of intent to abstracts@voicefoundation.org
1. In one combined PDF – submit *the letter* with a short paragraph about your training and mentioning your research and *a copy of your accepted abstract*.
2. **Submit your completed papers by April 1st.**
   A. to the committee and
   B. to Journal of Voice

HAMDAN INTERNATIONAL PRESENTATION AWARD

This Award is endowed by Dr. Abdul-Latif Hamdan and is specifically for those investigators who are accepted to present in the yearly Symposium: Care of the Professional Voice and who are coming from outside of North America. Hamdan Award Link

Anna Rumbach, PhD, MSpPathSt, GCHE, BSc, from Australia won in 2015.

BEST STUDENT PRESENTATION AWARD

A generous endowment by TVF Board of Directors member Dr. Abdul-latif Hamdan enables us to recognize excellence among students presenting research at the Symposium with a $1,000 Award. The Voice Foundation Symposium will be awarding a **Best Student Presentation Award**. If you or your student is interested in applying, we would appreciate it if you could please send an letter of intent responding to the following questions (as appropriate), and send it to Maria Russo at office@voicefoundation.org by March 1. Best Student Award Link

Matthew Schloneger, PhD, was the 2015 Awardee

QUINTANA RESEARCH AWARD

The Quintana Research Award is an engineering award, recognizing those who design or utilize technology and apply engineering principles that provide further understanding of the voice. As of 2014, the award will be given yearly, with exceptions. Quintana Award Link

2015 Awardee was **Ulrich Eysholdt, MD, PHD**

POSTER AWARDS - Determined at the symposium
BEST PAPER WINNERS—voted upon by the JOV Editorial Board in March

VOICE DISORDERS IN THE WORKPLACE: A CLINICIAN'S PRIMER

DEREK ISETTI, PHD, CCC-SLP

By Derek Isetti, PhD, CCC-SLP

Voices on the Job

Effective communication skills are often essential to a number of jobs in today's workforce, with up to 30% of the US population considering the voice to be a primary tool of the trade.[1] It stands to reason that when the vocal mechanism is compromised, this can lead to not only social but vocational barriers as well. To address how voice disorders might affect workers on the job, a newer concept known as presenteeism has emerged from the occupational health literature.[2] In contrast to absenteeism which measures total work days missed, presenteeism examines how the quality and/or quantity of an individual's work might be compromised due specifically to the effects of a health condition. An individual may show up physically to his/her job, but feel the need to work in a diminished capacity because of the impairment. As a concrete example, an individual with a voice disorder might be fully capable of holding a job in telephone sales, yet the quality of the voice and/or the effort required to speak may adversely affect overall job performance (i.e., number/success of total calls made). Qualitative interviews have revealed that some employees with chronic voice disorders such as spasmodic dysphonia (SD) actually go out of their way to avoid performing certain tasks at work because of the effort required to speak.[2] Imagine an elementary school teacher who would love to read a story to her class, but who reluctantly has the class work silently instead. Thus through intervention, many clinicians are assisting their patients to be physically present at their jobs, while also helping to ensure that the quality of the work performed is not compromised.

Voice Disorders as a Disability

Patient education has always been integral to the therapeutic process. However, although education on vocal hygiene and laryngeal anatomy has become common practice, less attention has been focused on educating patients about their work-related rights under the law. Many individuals presenting to voice clinics may not even realize that a voice disorder that "substantially limits one or more major life activities" is classified as a disability in the eyes of the government.[3] The Americans with Disabilities Act (ADA) even includes the specific terms "speaking", "communicating", and "working" under the umbrella of major life activities. This may be brand new information for those patients who are under the false assumption that a disability must involve some kind of restriction in physical mobility (i.e., wheelchair use).

Changes to the ADA

With the amendments made to the ADA in 2008, the designation of disability is now to be assigned at

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VOICE DISORDERS IN THE WORKPLACE, CONTINUED

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an individual's baseline functioning, regardless of the effects of any "mitigating measures." Mitigating measures refer to such things as pharmaceutical/medical interventions or physical devices. In other words, an individual post-laryngectomy might feel that he/she can communicate adequately using either an electrolarynx or a tracheoesophageal prosthesis (TEP) as a voice source. Yet if that person had no access to such devices, might that person feel substantially limited in terms of communication? Would an individual with spasmodic dysphonia who has responded well to botulinum toxin injections feel that voicing would be substantially compromised if injections were withheld? This essentially means that the determination of whether an impairment is considered substantially limiting is now to be made pre-intervention, with respect to a person's baseline level of functioning. This newer verbiage enables individuals to ask for time off from work (considered a "reasonable accommodation") in order to access the medical interventions that allow them to continue working in an optimal capacity.

When the original ADA was created in 1990, the assumption was that impairments should last for

6 months or longer in order to be classified as disabilities. Technically, an acute vocal hemorrhage or even dysphonia subsequent to thyroid surgery (damage to the recurrent laryngeal nerve) might not have been considered disabilities under the original law as long as there was the potential for resolution of symptoms within 6 months. However, the Equal Employment Opportunity Commission (EEOC) has recently stipulated that impairments no longer need to be chronic in order to be classified as disabilities. Episodic or transitory voice disorders are now covered as long as they substantially limit an individual's functioning when flare-ups occur.[4] This implies that virtually *any* voice disorder, whether acute or chronic, has the potential to be recognized as a disability even if symptoms are not consistent. A person with muscle tension dysphonia (MTD) whose symptoms might be more prominent at the end of a workday or towards the end of a workweek might now qualify for workplace accommodations.

Resources for Clinicians

In terms of patient counseling and education, the two primary resources that might be helpful for clinicians are the Job Accommodation Network (JAN, www.askjan.org) and the EEOC (www.eeoc.gov). The JAN offers pdf pamphlets with suggested accommodations for a wide variety of disability categories. (Note: the specific voice disorders pamphlet is located under the disability category of Speech-Language Impairments). These pamphlets can easily be printed

VOICE DISORDERS IN THE WORKPLACE, CONTINUED

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and offered to patients to bring to their employers should any accommodations be required. Over 20 suggested accommodations are listed, ranging anywhere from allowing flexible use of leave time to pursue treatment, to relocating workstations away from sources of background noise.

The EEOC is a bipartisan law enforcement agency tasked with handling many issues related to how the policies of the ADA are enforced. Individuals with voice disorders should be directed to the EEOC's website if their employers are unwilling to make the reasonable accommodations that are put forth by the JAN. The EEOC should be every worker's first point of contact when discrimination related to the ADA is suspected. In fact, discrimination lawsuits involving the ADA are typically only filed once mediation attempts between the EEOC and an employer have failed.

Speech-language pathologists (SLPs) and physicians are certainly not vocational counselors by training. However, considering that we are the primary and often only members of the treatment team in cases where patients with voice disorders self-select for treatment,[5] providing job-related resources and advice may be more important than we realize.

Note: For a more thorough discussion of the ADA as applied to voice disorders, readers are directed to: Isetti, D., Eadie, T. (2015) The Americans with Disabilities Act and Voice Disorders: Practical Guidelines for Voice Clinicians. *Journal of Voice* (In Press online May 7th 2015) doi: 10.1016/j.jvoice.2015.04.006.

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"...but the art of voice performance, with its texts, music, and storytelling is still an entity of its own that may never be demystified."

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RETHINKING VOICE WORK FOR THE COMMERCIAL VOICE PROFESSIONAL

By Jenny Muckala, CCC-SLP

Are classical schemas for voice habilitation pertinent and appropriate to meet voice use demands in the commercial music market? It is an often contested question. Setting opinions on territory aside, approaching voice habilitation and rehabilitation from the physiological stance of what is *functionally necessary* in voice production is a reasonable starting point for dialogue. The historical record of voice categorization within classical genres has been consistent in identification of Fach and, subsequently, repertoire for singers in the process of voice development[1], especially keeping an instrument 'safe'. Inherent in this categorization is the identification of voice range, tessitura, transition points, weight, and color/timbre, which have guided generations of our young voices to maturity. These categorizations would determine a singer's career path and governed the belief that an individual conveys emotion, intensity and energy best with a highly trained and tuned instrument.[1,2] **Even now, a great number of university-level voice programs continue to use classical voice training as baseline for voice habilitation in our young, talented voices prior to transition to commercial voice training. Classical music training offers immature voices a stratified approach to breath work, alignment, resonance, method in voice production and artistry.**

Singers who choose to use a commercial voice face a different challenge in a different era of voice production. The level of the challenge is highly impacted by the genre an individual artist selects. Standards of style and an individual's vocal characteristics are not based in training rigor and Fach, but rather by what is commercially viable. A majority of top charting Billboard male country artists will sing using their 'chest' voice, with primarily thyroarytenoid engagement, avoiding the transition, up to F#4 and very often up to A4 with significant subglottic force and weight. This is acrobatic is an example of a current 'standard' in country music. There's no conversation about voice categorization as a tenor or a baritone. There's no room for debate on the 'goodness' or 'badness' of this standard because it just it what it is. Female artists on top 40 radio regularly sing avoiding the transition, using chest voice up to D5/E5 whether that aligns well with voice categorization as an alto or a soprano. It's not part of the equation. These standards are established and directed by the most successful artists and how audiences are spending their money, [3, 4, 5] changing rapidly over short intervals of time due to artists' creative choices, how audiences' preferences change and the technology available for use

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in the creation of this art.

In other genres, the more unique the sound, the better, but in country music (for example), bigger is better.

I propose widening our definition to view voice development through the lens of functional production. What are the specific elements (voice range, stamina and flexibility) necessary to meet the demands of the individual's artistry and viability for top 40 radio market? This question takes into account consideration of vocal training based on specific adaptations to imposed demands (SAID)[6] and necessitates open dialogue with the artist (and perhaps songwriters and producers more expansively) about the 'standard' each artist is aspiring to in vocal performance. Total voice range continues to be one important indicator of capability and vocal health, but training could turn towards a broader inclusion of the necessary rigor in use, range necessary to meet the demands of the genre and mindful inclusion of what we know about voice science, anatomy, exercise physiology, wound healing and vocal injury, to come to a more inclusive description of Functional Voice production in this realm of professional voice use.

Research in exercise physiology suggests that training principles for skeletal limb musculature may be pertinent and valuable here.[6] Training specificity, rigor of training and detraining effects may be better harbingers of voice outcomes and bring better focus to training guidelines. What is it exactly that the artist needs to do? **What is the value of a staccato or arpeggiated vocalises if the artist does not use this manner of articulated movement in commercial performance? The goal: a marriage of greater vocal efficiency at a higher rigor of use, to facilitate greater individual awareness and establish optimal vocal economy through use of a myriad of tools available to all of us, inclusive of semi-occlusion of the vocal tract,[7] resonant voice work,[8, 9, 10] alignment and body work and breath work.** **But, here's the bottom line: bring this work into the realm where the artists live.**

This is not an indictment of previous training practices but a call to a mindset where we invite our artists into greater dialogue and collaboration with us in the world of commercial voice habilitation. It is based in the hope of minimizing or avoiding vocal damage necessitating voice intervention in the capable hands of our laryngologists and voice rehabilitation with our speech pathology colleagues with singing voice expertise. There is much we all have to learn and quantify in this endeavor to 'do no harm' while we partner with the professional voice

> "Standards of style and an individual's vocal characteristics are not based in training rigor and Fach, but rather by what is commercially viable."

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users we serve. We, as voice care professionals, have a lot to offer the voice community in what we know *so far* about voice health and production, but there is so much we do not yet know. Developing a basic knowledge of market and artist expectations in genre-specific world commercial voice is an imperative first step and good place to start together.

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Jenny Muckala, CCC-SLP, is the senior speech pathologist and singing voice specialist at Vanderbilt's Voice Center as well as clinical faculty within Vanderbilt's Department of Otolaryngology in Nashville, TN. She has held an adjunct professor position for nine years at Belmont University's School of Music teaching vocal pedagogy and working with the commercial voice students within the music program. She is a contributing author to multiple books and articles related to the habilitation and rehabilitation singing voice professionals, particularly in the realm of commercial music. As a result of this work and growing awareness of the need for discourse in this area of voice, she organized the first national Commercial Voice Conference at Vanderbilt in March 2013. The purpose was featuring discourse among prominent songwriters, producers, artists and engineers in the music industry as well as singing voice teachers, laryngologists and speech language pathologists specializing in singing voice, and received rave reviews. The third Commercial Voice Conference will be held June 26-28, 2016 at Vanderbilt in Nashville, TN.

VOICE FOUNDATION NEWS

45TH ANNUAL SYMPOSIUM, CHAIRMAN, ROBERT T. SATALOFF

JUNE 1—JUNE 5, 2016 PHILADELPHIA PENNSYLVANIA

Draft Schedule

Wednesday, June 1
Basic Science Tutorials
Accent Reduction Coaching

Thursday, June 2
Science Sessions
Quintana Awardee: Ronald Baken PhD
Keynote Speech: Joseph Zabner, MD
Panels
Poster Session—Reception

Friday, June 3
Special Session:
When Exceptional Speaking Skills are Required
Featured—Solomon, Behlau, Sheehan, Raphael
Panel—Heller, Pasqua, Hunter
Young Laryngologists Study Group
Vocal Workshops

Friday, June 3
Voices of Summer Gala

Saturday, June 4

Medical Sessions

Speech-Language Sessions

Interdisciplinary Panels

G. Paul Moore Lecture - Mara Behlau, PhD, CCC-SLP

Vocal Master Class

Sunday, June 5

Medical Sessions

Interdisciplinary Panels

Voice Pedagogy Sessions

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