

Vf

## The Voice

The Voice

VOICE OF THE EDITOR

Kim Steinhauer, PhD

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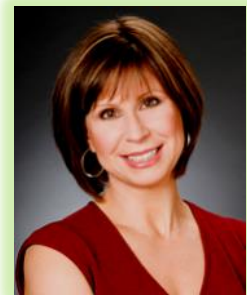
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## Voice Science: What Is It Good For?

BY KIM STEINHAUER, PHD

Anatomy. Physiology. Acoustics. Psychoacoustics! Past transcripts of the Voice Foundation Symposia and articles in the Journal of Voice overflow with exemplary presentations and studies on each of these topics. Every year many scientists, therapists, and artists collaborate in theoretical and clinical research and provide stimulating and detailed data connecting the dots between the sub-topics of voice science. Although our practitioners view this work as important, many of our voice teachers and trainers still separate the research from

the practice. In class lectures, they track formant frequencies, identify the intrinsic muscles of the larynx, and discuss the Fletcher-Munson curve; yet, in the studio (and sometimes the clinic) these premises are set aside in favor of vocal artistry in speech and song. Our three contributors for this newsletter offer their opinions on merging the voice sciences with the vocal arts. From formant tuning to optimizing vocal instruction for “nerds and hippies,” our experts share practical strategies to reach all voices in this issue entitled, “Voice Science: What’s it good for?”

VOICE OF THE EDITOR  
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B

*Voice*  
*of the Editor*

# VOCAL LEARNING PERSONALITIES: DUALITY IN VOICE EDUCATION

BY ROCKFORD SANSOM,  
PHD, MFA

On the first day of my voice classes, I always quote from the Harry Potter series. “Like potions class at Hogwarts,” I explain, “understanding the voice is a subtle science and an exact art.” The Millennials love that.

The quote highlights the polarity inherent in much vocal training, a discipline that encompasses both the technical elements of voice science and the practical, often artful, application of those principles. This dichotomy mirrors a multigenerational debate in educational philosophy: direct instruction versus constructivism. With fairly self-evident names, direct instruction advocates explicit pedagogy with plain language and traditional delivery like lectures and demonstrations, and constructivism (an umbrella term for many theories) encourages learners to con-

struct their own understanding for concepts with hands-on activities.

## *Vocal Learning Personalities*

Anecdotally, I find that most voice students and most voice teachers fall into one of two categories aligning with the two educational theories. I playfully call the categories the nerds and the hippies. Nerds favor direct instruction and want absolutes and facts. They need specific learning goals with tangible concepts and language, and they cherish the exactitude of science. Hippies favor constructivism and love exploration. They find specific end goals stressful and value the freedom of vocal metaphoric language and play.

This lighthearted spectrum based in education phi-

**"This dichotomy mirrors a multigenerational debate in educational philosophy: direct instruction versus constructivism."**

losophy offers a unique way to evaluate ourselves as teachers, trainers, coaches, and clinicians, and the spectrum offers a way to view our personality as it relates of our clients and students. On the imaginary spectrum, a number one (1) is a full nerd, and a number ten (10) is a full hippie. I would wager that most clinicians and scientists would skew toward lower numbers, and most actors and singers would skew toward the higher numbers. While I teach actors and singers, I give myself a four (4) since I have a clear

*(Continued on page 3)*

## VOCAL LEARNING PERSONALITIES, CONTINUED

(Continued from page 2)

nerd tendency despite my artistic occupation.

### *Language and Styles within the Personalities*

Knowing my Vocal Learning Personality gives me a way to begin working with classes and private clients. Where do I fall on the spectrum, and where does my client fall?

**Nerds:** Nerd language involves seeing and hearing in order to process. When a client has accomplished a vocal target, the client may say, “I hear a change,” or they may hear the teacher and recreate the sound. Nerds also enjoy using anatomy charts and videos or watching their voice on a spectrogram. This group prefers to use a high number of anatomical concepts and words and detests ambiguous, imagistic language. Nerds want clear objectives and assessment techniques.

**Hippies:** Hippie language involves feeling and whole-body movement in order to process. When a client has accomplished a vocal target, the client may say, “I

feel a change.” The client may also respond to movement like dance or yoga as means to prompt vocal change. Hippies usually do not enjoy using anatomical terms, finding them overwhelming and superfluous.

### *Reaching the Other End of the Spectrum*

Most educators instinctively teach to their own learning style—a fact true of all kinds of learning. Similarly, voice educators too often teach to their own Voice Learning Personality. I’m a nerd. Even though I am a singer and actor, I did not care for hippie styles of voice training in the conservatory. I hated dancing vowel sounds; I wanted the formants ex-

**“Meeting someone’s need pedagogically is just as important as the knowledge behind the pedagogy.”**

plained, which frustrated my more hippie instructors. Now as a teacher, I know that I can sometimes frustrate my hippie clients and students with a barrage of Latin names and laryngoscopy videos. I cannot only teach to my Vocal Learning Personality style.

Ultimately, as teachers, coaches, and clinicians, we want to reach all kinds of learners. Our curricula must



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back and forth between the personality styles. In one-on-one settings, the client and teacher personalities may differ, which will require tactics outside of a teacher’s preference.

**Tips for Nerds:** Only give the least amount of terminology needed at any moment. Leonardo da

Vinci advises that “Simplicity is the ultimate sophistication.” For beginning clients, nerds may need to streamline core concept to sixty seconds or less. Hippies may need to move more, play more, and do less repetitive drills than the nerds.

**Tips for Hippies:** Go beyond metaphor. Imagery like “feel the breath wash over you” or “be on

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## VOCAL LEARNING POSSIBILITIES, CONTINUED

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your voice” deeply exasperates nerds. Give anatomical concepts, or if those are not available, then offer recorded examples of the desired vocal goal. Nerds need the objec-

tives clearly stated at all times and assessment tools.

Obviously, all learners enjoy both nerd and hippie traits and styles, and certainly no person is exclusively either of these stereotyped personalities. But clinicians may

have clients that need to dance vowels, and theatre teachers may have actors who need to look at laryngoscopy videos. Meeting someone’s need pedagogically is just as important as the knowledge behind the pedagogy.



# World Voice Day

## TVF Houston Chapter

In order to celebrate our upcoming World Voice Day, Treasurer Jack Beetle and TUTS have graciously offered to host your attendance (and a guest) at an

**Invited dress rehearsal for TUTS’ Underground Production of “Heathers: The Musical”, Tentative Rating: R**

Wednesday, April 27, 2016 at 7:30pm, Zilkha Hall at the Hobby Center for the Performing Arts

There will be no cost to attend, however it is a dress rehearsal and there may be some stopping and starting to manage technical difficulties. Also, our seats will be limited to about 25, so please RSVP early. Invited dress is just like a performance: park in the Hobby Center Parking in back and then go to Zilkha Hall. There will be someone with a list in the lobby checking names.

**Please RSVP by April 18 to Jack directly at [jack-beetlestudio@gmail.com](mailto:jack-beetlestudio@gmail.com)** and he’ll put a list together and give it to the folks at TUTS. Remind them that the show is Rated R/NC-17. Jack will be in the pit conducting and playing keyboards, and I’ll unfortunately be on my way to a meeting in Chicago that night. Please seek out and engage with other members while there and take a picture of the group so I can post it on our next minutes.

**Be a voice.  
Not an  
echo.**



WORLD VOICE DAY  
APRIL 16, 2016

## PINK MIST AND THUMBELINA VOICE TRAINING: The Role of Voice Science in the Studio in the Twenty-First Century

BY MARCI ROSENBERG, MS, BM, CCC

Just last week I had a female patient in her 40's in my voice clinic. She is an active performer of Christian pop music in her church and community and has sung professionally for many years. Her speaking voice was soft-edge and somewhat high-pitched, and her singing voice was unengaged and weak sounding. During our first session, we explored her vocal capabilities. She was astounded that I was asking her to sing in her chest register at a good moderate volume. She cautiously followed my directions and she could not believe that after such a short time it felt so easy and sounded so good to her ear. When I asked why she was so surprised by her vocal response, she told me that she underwent voice therapy in her 20's and was told at the time by the speech pathologist that she needed to both sing and speak like Thumbelina. He told her to go home and watch the movie and emulate that vocal quality; and according to her, this was the primary focus of her treatment plan. She diligently worked toward this goal, and has carried with her 20+ years of this Thumbelina voice ther-

apy technique, which has not served her well. In a clinical setting, by today's standards that would be considered unethical. Voice science has evolved significantly over the past 50 years and technical advances have allowed voice scientists to look closely at the biomechanics of voice production in numerous ways. In a clinical world where demonstrating efficacy is of paramount importance, management strategies of the voice have evolved over the years out of necessity to ensure that our clinical practice is consistent with current research and not with a Hans Christian Andersen fairy tale character.

How have vocal pedagogy and vocal pedagogy training programs also evolved to better align themselves with current knowledge of voice science? What is the role of voice science in the voice studio where artistry and craft are so vital to the process of training to be a vocal performer? Does emphasis on muscles and biomechanics stifle artistic growth? Garcia II wrote about vocal health and hygiene parameters that are not so far off from what we would discuss today. In fact, Garcia II even employed some



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very early exercise physiology principals in his recommendations on how long to practice to build vocal stamina. Since the time of Garcia II, not only have we made significant technical advances which have allowed us to better study the biomechanics of voice science in a more objective manner, but the industry demands of the vocal athlete have significantly changed and the vocal stakes are much higher (as are the notes written in many contemporary songs). For these reasons, the role of voice science is just as im-

**The Voice of the Therapist**

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portant in the voice studio as it is in a clinical setting. In my own voice studies over the past 30 years, I have been told to imagine every possible thing from pear shaped tones floating out of my head, to inhaling a rose, to visualizing pink mist. Every once in a while I made a nice sound but **I doubt it was because I was imagining pink mist floating out of the back of my throat.** Not that there is never a role for certain types of visual imagery for some learners, but in the twenty-first century there is no reason why functionally-based voice training rooted in voice science shouldn't be foundational to one's teaching regardless of vocal style. I have found that singers of all styles, levels and ages can easily relate to something that is tangible to them. Since so much of voice production is not seen by the eye, and often not kinesthetically obvious, an athletic analogy used to convey voice science principals is often very useful to provide context allowing the learner to understand that voice production is a biomechanical process. When I explained to my Thumbelina patient that we were strengthening and coordinating muscles when working in her chest voice and strengthening and coordinating in other ways when working in her head register, she immediate-

ly switched her previous reference of excessive caution and vocal guarding to an athletic training mind-set. This switch allowed her to experience voice production from a different, more functionally-based perspective. There are numerous ways to address various vocal issues. In this particular case, I simply had her vocalize beginning around A3 in slow third glides at a good moderate volume on an /a/ moving then to brighter vowels for several minutes then switching to her head register where I had her vocalize on /i/ and /u/ in a simple 5-note pattern before switching back down into her chest register again. I asked her to stop and noticed what she was both feeling and hearing throughout the process. There is no particular magic in these simple exercises, however, the intention behind why I chose them was not a random choice, rather it was based on how I wanted her muscles to respond in different parts of her range. From this point she will build stronger, kinesthetic references for various kinds of vocal productions and have tools and exercises designed to elicit specific vocal behaviors. She now has a much more concrete frame of reference when managing her own voice after completing her short course of voice therapy. Voice science has evolved significantly over the past 50 years and voice clinicians and pedagogues now have access to many wonderful resources, both at the collegiate lev-

*"Since so much of voice production is not seen by the eye, and often not kinesthetically obvious, an athletic analogy used to convey voice science principals is often very useful to provide context allowing the learner to understand that voice production is a biomechanical process."*

el and continuing education opportunities to expand their knowledge base. To that end, hopefully Thumbelina vocal references are a thing of the very distant past as we continue to move forward with scientific and functionally based voice training.



## 2016 SYMPOSIUM INFORMATION

## FRIDAY MORNING SPECIAL SESSION

## When Exceptional Speaking Skills are Required

## Introduction by Nancy Pearl Solomon, PhD



### *The Importance of Voice for Public Speaking*

**Mara Behlau, PhD** was born in São Paulo, Brazil. She is speech-language-pathologist, voice specialist, executive coach and also consultant on communication. She is an ASHA FELLOW and also received the Certificate of Recognition for Outstanding Contributions in International Achievements. She is an affiliate professor at INSPER university, São Paulo, where she teaches communication for business - interpersonal relationships. She has been involved at The Voice Foundation for more than 30 years and is author of many textbooks in the area of voice.



### *Political Speechmaking: How the Text and the Voice Complement vs. Collide*

For 25 years, **Michael Sheehan, MFA** has used his voice and communication skills to enhance vocal communication for political leaders, corporate executives and other speakers throughout the world. He has coached more presidents, vice presidents, first ladies, cabinet secretaries, governors, mayors and members of congress than anyone in the United States; and he has been involved as a voice coach in every presidential and vice presidential debate since 1988. His training and advancement of the confidence and credibility of politicians, journalists, Hollywood stars, professional athletes and others has had profound influence on public opinion, and in world leadership



### *Walking the Actor's Tightrope between Vocal Survival and Extreme Vocal Demands*

**Bonnie Raphael, PhD** was a professor in the Department of Dramatic Art at the University of North Carolina at Chapel Hill. Before coming to Chapel Hill, Dr. Raphael coached productions for the American Repertory Theatre and taught at its Institute for Advanced Theatre Training at Harvard University for eleven years. She taught for more than 45 years at educational institutions including Northwestern University, the University of Virginia, the National Theatre Institute in Denver and elsewhere, and she has coached more than 250 productions - and so much more.

## FRIDAY MORNING SPECIAL SESSION PANEL GUESTS

#### **Johnny Heller**

was born in Chicago to a lovely family that while happy to have him were nonetheless upset - having hoped for a Portugese Water Dog. Johnny graduated with honors from Loyola University of Chicago and let his prestigious education go to waste while pursuing a career in acting. His quest took him from Chicago to New York to Los Angeles and back to New York where he currently resides with his sweetie and his dogs. He has won audio awards galore! <http://johnnyheller.com/about/>



#### **Walt Hunter**

a Philadelphia native and an investigative reporter with KYW-TV. He joined the station in 1980 as a crime reporter and was named best television reporter by Philadelphia Magazine in 2004. He has received eight Philadelphia Emmy Awards. The Broadcast Pioneers of Philadelphia inducted Hunter into their Hall of Fame in 2007.



#### **Elaine Pasqua, CSP**

Since 1997 Elaine Pasqua has combined her life experience, passion, and enthusiasm to transform the lives of half a million college students nationwide. Speaking at more than 60 campuses annually, her entertaining and uniquely interactive programs motivate students to assess the life-altering consequences of high-risk drinking, sexual assault, and unprotected sex. Elaine's expertise has given her the opportunity to provide player development training yearly for numerous NFL teams, the NFL, the NBA, and the Philadelphia Phillies. As a member of National Speakers Association, Elaine recently obtained her Certified Speaking Professional designation which is held by only 12% of the 5,000 speakers belonging to the Global Speaking Federation.



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# ACOUSTIC PEDAGOGY

BY KEN BOZEMAN, MM

Nine years ago in an article for the *Journal of Singing* entitled “A Case for Voice Science in the Voice Studio,” I wrote the following about current pedagogy:

“Though few would claim to base their teaching exclusively on voice science, many now seek to compare historic pedagogy, or at least their own personal pedagogic histories, with information emerging from the investigations of voice science in order to confirm or adjust their approach, for new input, and for help in articulating more accurately vocal function and strategy for their students.”

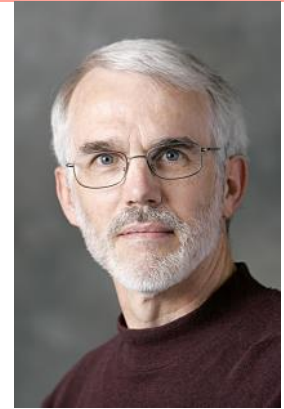
I followed with examples about achieving a noiseless inhalation and about the acoustics of male *passaggio*. Since that time I have written additional articles and the book, *Practical Vocal Acoustics: Pedagogic Applications for Teachers and Singers* (Pendragon Press, 2013). In these writings I acknowledge that acoustic pedagogy is but one facet of a curriculum concerned with the physiology of singing, and must be complemented by instruction on breathing and laryngeal registration.

Nonetheless, with sufficient knowledge and a trained ear, acoustic pedagogy is an area of remarkable practicality and efficacy that continues to transform my own pedagogy, significantly improving studio efficiency. This present brief article highlights a few examples of its application.

Here are several observations:

- There are acoustic registers that are somewhat independent of laryngeal registers. These registers—segments of range demarcated by audible transitions—are primarily the result of source harmonics passing through the first formant ( $F_1$ ).
- If the vocal tract shape is kept constant during pitch ascent, the timbre of the vowel and tone will become increasingly close as source harmonics rise through the first formant. I have labeled this phenomenon *passive* vowel modification, in contrast to the *active* vowel modification accomplished by reshaping and retuning the first two formants.
- The first formant instinctively locks on and tracks lower harmonics that rise through it. Tracking the second harmonic ( $2f_0$ ) with the first formant ( $F_1$ ) is yelling. Doing it skillfully belongs to styles of singing related to belting. It is avoided in Western classical singing. Tracking the first harmonic (the sung pitch,  $f_0$ ) is whooping, and is characteristic of human celebration, of treble voices in Western classical singing, and in some popular genres.
- There are only two ways to raise the first formant in order to track a harmonic: vowel opening (a good choice where appropriate), and tube shortening/larynx raising (a poor choice in classical technique except for extreme range: B5 and above)
- In Western classical singing, all harmonics other than the first should be allowed to pass through the first formant *without* tracking. In other words, the first formant of a vowel (and the vocal tract shape and length) should be maintained at least until the second harmonic has risen above  $F_1$ . This will result in predictable passive vowel migrations at acoustic registration transition points.
- Knowing first formant locations and the passive vowel migrations and sensations associated

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KEN BOZEMAN, MM

Professor of Music  
Lawrence University

The  
Voice  
of  
the  
Scientist

## ACOUSTIC PEDAGOGY, CONTINUED

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with these acoustic registration events constitutes a reliable basis for problem solving in the studio.

Resources that identify average formant locations by voice can be found at:

[www.kenbozeman.com/](http://www.kenbozeman.com/)

I close with one example of application for treble voices.

Treble voices will experience a maximum vowel migration as their sung pitch approaches the first formant from below. For example, the first formant of a close /o/ is in the vicinity of C5.

Starting at about the A4 below that, the vowel will seem to the singer to migrate increasingly toward an /u/ if an open-throated, convergent vocal tract shape is successfully maintained, though external listeners will continue to perceive this as a resonant, though closer /o/. Above about D5 the singer can begin to open the /o/ vowel more to maintain and track whoop timbre into the upper voice.

This phenomenon is often best explored initially in a genuinely motivated inflective speech loop, such as in the epiphany, “Oh, I see!” with an up and down pitch excursion on the “Oh.” Suc-

cessfully coaching the vowel articulation and laryngeal depth (i.e., the vocal tract shape) to remain the same while the acoustic sensation changes should result in the above described vowel migration. Once that migratory path is experienced, any vocalise that ascends and descends through C5 on /o/ can be modeled after that migration. A simple example might be: starting on Ab4, sing Ab Bb C Bb Ab (do re mi re do). Transpose this up and back down a few pitches. Upward steps in this pattern should seem closer and deeper in vowel and timbre, while downward steps will gradually open.



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Help us to celebrate **WORLD VOICE DAY** with a short pause in your evening for our concert and reception sponsored by [Moore Brothers Wine Company](#).

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The concert will be hosted by AVA's Danny Pantano. It features an introduction by Chairman, Robert T. Sataloff and the voices of members of The Voice Foundation and Philadelphia Ear, Nose and Throat Associates: *Christina Chenes, Katie Erikson, Michelle Eugene, Maria Russo* and special guests *Maria Jabbour, Lisa Willson and Grant Uhle*. Richard Raub will accompany the singers. The reception, sponsored by Moore Brothers Wine Company, follows.

*World Voice Day*

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**45TH ANNUAL SYMPOSIUM**, CHAIRMAN, ROBERT T. SATALOFF  
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**Wednesday, June 1**

Basic Science Tutorials

Accent Reduction Coaching

**Thursday, June 2**

Science Sessions

Quintana Awardee: RJ Baken PhD

Keynote Speech: Joseph Zabner, MD

Panels

Poster Session

**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—Dolora Zajick

**Sunday, June 5**

Medical Sessions

Interdisciplinary Panels

Voice Pedagogy Sessions





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