

Excerpt from *Voice for Performance 3<sup>rd</sup> Edition* by Linda Gates

The scientific study of the human voice has made great strides within the last century since Manuel Garcia, a renowned 19th C singing teacher did extensive research into the voice. His *Traité complet de l'art du chant* (1847); or in English “Complete Treatise on the Art of Singing” is a classic. Garcia’s interest in the voice led him to try to discover more about the physical anatomy of the voice and he was the inventor of the laryngoscope which is a small mirror on the end of a narrow handle, rather like a dental mirror that can look down the throat to see the vocal cords. Garcia’s influence continued into the 20th century, and he taught singing at the Paris Conservatoire in 1847 and from 1848 to 1895 taught at the Royal Academy of Music in London.<sup>i</sup>

For most of the twentieth century, voice science was not something that was of much interest to many voice teachers. The focus of teaching was on how the student could achieve the quality of sound that pleased the ear of the teacher and how to replicate that sound for the listener.

### My Personal Voice History

I never intended to be a voice and speech teacher. Like so many other theater voice teachers, I began my teaching career as a result of my vocal training as an actress, which I received at what was then called Carnegie Tech now Carnegie Mellon, where the Theatre Department functioned as a conservatory within a university setting. Our voice training focused on breathing, resonance, diction, classical text and losing our regional dialects. I came from the south, so southernisms, as my teacher Edith Skinner described them, had to be rooted out. Also, we were not encouraged to sing as musical theatre wasn't considered a worthy subject for a serious actor. Determined to prove to my mother, that I could sing, even though the sheet music

was always too high, (16) I would sneak into the practice room in the music department to work in secret with one of their graduate students. It was something I kept very quiet.

I don't remember learning much about the physiology and science of the voice. Our first voice and speech teacher was Edith Skinner who assigned us *The Speaking Voice* by Ruth B. Manser and Leonard Finlan Manser and told us to read it. The book gave basic scientific facts about the voice, but never described what to do to make the voice sound better. In fact, very little was said about the voice in general - the focus was on diction and acquiring 'stage standard' which was an accent used in classic plays. Certainly nothing was said about keeping the voice healthy. What I did know tended to be anecdotal rather than factual - tea with lemon was good for the voice, screaming at football games was bad. Of course, we were taught in class that the voice was produced by the vocal cords, taught the mechanics of breathing and resonance, and how to shape, articulate and project complex texts in a 1000 seat theatre with no microphones. However, if an actor began to lose control of that marvelous vocal instrument, through illness or vocal abuse, we were at a loss. If you had laryngitis you went to an Ear, Eye, Nose and Throat doctor who seemed equally at a loss about the demands of performance on the voice of the actor or singer. If you had a cold or hoarseness, you were just told not to talk until you got better.

After graduation, when I began working as a professional actress, other actors, who hadn't trained at a conservatory, would often ask me how to breathe or scream on stage or how to correct certain problem like nasality or a sibilant 's'. I would try to help by showing them how I did it. Edith Skinner actually encouraged her students to teach and arranged for us a few of us to teach voice and speech classes to teenagers at John Robert Powers, a former modeling agency, that had a franchise in many cities throughout the USA, including Pittsburgh, which is where I began to teach. The John Robert Powers School became my 'day job' so instead of waiting on

tables, I taught others the voice and speech techniques that I had learned from Edith Skinner. I eventually taught voice and speech at John Robert Powers schools in cities that I moved to like San Francisco and New York and starting teaching actors privately.

In 1966, thanks to the support of Ted Hoffman, who had been Chair of the Theatre Department at Carnegie Tech, I first began teaching voice and speech in the Theatre Department at New York University School of the Arts with no more credentials than my BA. Those were the days of the "League Schools", the now-defunct League of Professional Theater Training Programs in which teachers were hired based on their professional resumes rather than their academic credentials. Ted Hoffman had been Head of the Drama Department at Carnegie Mellon when I was a student there, and now wanted to revolutionize the training of actors in America starting with the voice. He felt that voice training in America had been too *ad hoc*, with the emphasis on diction at the expense of voice training. His idea with to have two master teachers: Nora Dunfee, Master Teacher of Speech who had trained with Dr. William Tilley, an Australian who came to American during WWI and ended up in New York where he taught elocution at Columbia University. One of his prize students was my teacher Edith Skinner and his teaching assistant was Margaret Prendergast McLean who also taught Edith. The Master Teacher of Voice was to be Kristen Linklater, who was from Scotland, and had trained at the London Dramatic Academy with Iris Warren. Those of us who were Instructors worked with both Kristen Linklater and Nora Dunfee in master classes that first year with the idea of developing a shared pedagogy for both voice and speech.

As I began teaching, I began to encounter students with vocal problems that I had never heard of. It wasn't just over-use of the voice that might respond to vocal rest, these students had serious problems that were never covered in any of my classes at Carnegie Tech. For instance,

one girl's jaw would often stick and wouldn't move up or down when she was speaking, another complained of perpetual hoarseness that wasn't related to performance, while another suffered from frequent voice loss after a performance. Quite frankly, I didn't know what to do or who to ask. There was a general belief in the theatre world at that time that all these vocal problems could be attributed to tension, so students spent a lot of time lying on the floor imagining pink clouds floating by. Sadly, it didn't help their voice problems.

In 1984, I heard about a voice conference being held at the Julliard School in New York called *The Symposium on the Care of the Professional Voice*. This gathering of voice scientists, otolaryngologists, physicists, voice teachers, speech pathologists, and other experts in voice studies was being held to provide a forum to share the latest scientific information about the performing voice. It was sponsored by The Voice Foundation, an organization founded by Dr. Wilbur Gould, a well-known otolaryngologist who specialized in the vocal difficulties of performers like of Frank Sinatra, Luciano Pavarotti, Linda Ronstadt, Elizabeth Taylor and The Rolling Stones. I remember walking into the reception area of the Julliard School for the conference, (I don't think I paid the fee as it never occurred to me, and they never asked) and discovered a world of the voice that I never knew existed. I couldn't really understand most of the panels or the lectures, as it was pure science with lots of statistics, but the visuals were fascinating. I recall watching an amazing film by Minoru Hirano, M.D. that showed the first images of the edges of the vocal cords vibrating. I had only seen drawings of the vocal cords in my textbook, so for me, to watch the edges of these tiny white, glistening vocal cords vibrating was revolutionary. There were gruesome slides showing vocal nodules, polyps and bleeding vocal folds. I learned about paralyzed vocal cords after listening to a singer sing beautifully with only one paralyzed cord, after working with her amazing vocal coach. I even watched operations

on the vocal folds (not cords, I was told). in which they used human fat to plump them out and warned about the dangers of using silicon filler instead of fat. There were also medical lectures on how to maintain healthy voices, including an admonition from Dr. Van Lawrence, who ministered to the singers at the Houston Opera Company where he told the singers to always drink enough water to "pee pale" which meant that the vocal cords were properly hydrated. I'm embarrassed now to recall my lack of basic knowledge, but everyone was very nice to me and even answered some of my questions. I listened to lectures by Dr. Wilbur Gould, Robert Sataloff, Ingo Titze and other voice doctors who described professional singers and actors as "professional voice users" or P.V.U for short. We were told that singers should always interview the anesthetist before surgery and say that they were PVUs. and to make sure that the tube that goes through the vocal cords was small enough not to damage the vocal folds. (I still do that!) There was an especially wonderful a talk with questions and answers by a charming old German otolaryngologist, Dr. Friedrich Samuel Brodnitz, who was a mainstay of the opera world and the author of *Keep Your Voice Healthy: A Guide to the Intelligent Use and Care of the Speaking and Singing Voice*. Dr. Brodnitz served on a panel on how to keep temperamental singers and performers happy and recommended holistic methods in addition to medical intervention. "If they want lemon tea or soothing cough drops and believe it helps them and gives them confidence," let them have it - it cannot hurt them." It was said that the great soprano Leontyne Price would not sing if Dr. Brodnitz was not in the front row of the Metropolitan Opera House. Some of the serious scientists shook their heads disapprovingly because they thought he was being indulgent and not scientific enough, but I adored him.

One of the interesting highlights of the conference were impassioned arguments between singing teachers and voice scientists about the difference in art and science in vocal health and

outcome. “Sit down, Dr. Titze” one moderator shouted at Dr. Ingo Titze, one of the leading voice scientists who was arguing with a famous singing teacher. The arguments pitted the singing teachers against the voice scientists as to what the correct methodology was and how to measure it. Hapless students of the singing teachers were asked to sing with tubes down their noses, so the technique could be evaluated scientifically by the voice scientists. One of my favorite moments was when a famous singing teacher challenged the voice scientists to put their theories into practice by taking singing lessons themselves! And to my great surprise they accepted. I have since heard Dr. Ingo Titze and other voice scientists sing very professionally at conferences. It seemed as if science could be very exciting after all.

One of the scientists I met was Dr. Dale Teaney, a physicist who was working on something called the “Quantative Electroglossograph” which could measure pitch and vocal fold vibrations from a device strapped around the speaker or singer’s neck, and he believed that that such a device might help my students improve their voices. I tried it out myself and found it impossible to speak a monologue guided by the readout from the machine. Dr. Teaney was very surprised because he thought it would revolutionize voice teaching as all the students had to do was watch the print read out as they spoke and change their performance accordingly. I tried to explain that strapping such a device around the throats of a classroom of acting students would terrify them and as each device cost thousands of dollars it was probably best to teach beginning actors the old-fashioned way. Finally, after overcoming his astonishment that someone with my limited scientific knowledge actually taught students to speak at a major university, he decided to widen my horizons scientifically giving me two invaluable books which I still have and treasure to this day: Dr. Ralph Applebaum’s *The Science of Vocal Pedagogy* and William Venard’s *Singing, the Mechanism and the Technic*. He told me to read them carefully and follow the

science and I promised to supplement my teaching with the aid of my newly acquired scientific knowledge. This I have continued to do and still attend those wonderful foundational meetings of The Voice Foundation and PEVOC, the Pan European Voice Foundation. Dr. Teaney, became a great friend as well as mentor who introduced me to Dr. Bill Reed, who also attended that conference and became my singing teacher. I then introduced Bill to the Theatre Program at the Circle in the Square Theatre Program in New York, where I also taught and where he began teaching singing to the Music Theatre students. His students have gone on to have wonderful careers in Music Theatre winning the Oscar Hammerstein, MAC, Drama Desk, Emmy and Tony awards. He also established a voice studio in New York around the corner from Lincoln Center and his students have performed at the Metropolitan Opera, City Opera, many European opera houses, and in hundreds of Broadway shows and national tours.

Finally, you may wonder, why, exactly, so many physicists and scientists were so curious about studying and observing and learning about the secrets of the human voice in 1984. It was very simple - their goal was to teach computers to talk.

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iiiiii [Mirroring the voice from Garcia to the present day: some insights into singing voice registers.](#)

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