Contemporary Commercial Music:
More than One Way to Use the Vocal Tract

Jeannette L. Lovetri

The vocal tract, including its two component parts, source and filter,[1] is an almost infinitely variable tube capable of multitudes of resonance possibilities. While some people may have more capacity to adjust and change the vocal tract than others, all vocal training ultimately aims to modify the physiologic behavior of the larynx, pharynx, and oral cavity (and the breath), or the sounds produced would never change. For the voice that will sing primarily classical music, the goal of training is to condition the instrument to be more extensive in range, more able to create and maintain consistent acoustic parameters (resonance), resulting in a tone more consistent and beautiful and more expressive of emotion than that of an untrained "speaking-only" voice. This is done by making the musculature of the throat and body stronger and more flexible through various exercises. Even those nonmechanistic pedagogues who teach strictly by artistic/aesthetic imagery are effecting change in the vocal folds (source) and the pharyngeal/oral cavity (filter), whether they realize it or not.

Research has shown that there are many ways to create a given vocal target.[2] It is possible to create vowel sound qualities or tonal qualities by maneuvering the abdomen, the rib cage, the vocal folds, the laryngeal position, the pharyngeal walls, the velum, the tongue, the lips, and the jaw. Since there are so many possibilities, one would expect to find all kinds of singing to reflect them.[3]

In 1990, research was conducted on one singer that indicated that the acoustic envelope, subglottic pressure, and airflow parameters were different but consistent within three distinct vocal qualities—chest, mix, and head registers—on two vowels. The conclusions suggested that the various tonal qualities heard in classical and commercial music are not the result of having specific anatomical or physiologic attributes or capacities, but of movements within the vocal tract itself.[4]

In 1997, research was conducted at Mt. Sinai Medical Center in New York on seven female professional music theater singers.[5] While the study was very small and was only a preliminary report, some interesting tendencies were observed. In all seven singers, in all register qualities, any vowel sound designated as being "brighter" was made in a smaller space. That is, the vocal tract configuration shrank. In this particular study, for some singers the larynx rose and the pharynx constricted; for some the soft palate came down and in, while the tongue came up; in others the pharyngeal walls constricted while the soft palate narrowed; and in the rest the larynx itself was constricted or compressed although the oral/pharyngeal space was unchanged. Each seemed to be a different way to make the vocal tract smaller, which, in turn produced what the researchers agreed was a "bright" sound.

Other styles of music where the criteria are different than for classical music clearly demonstrate that the voice is not restricted to a particular physical coordination. For instance, in music theater the paramount goal is to make the words meaningful and clear and to communicate the emotional life of the character in an authentic manner. Since Broadway shows are electronically amplified, resonance—used in the old-fashioned sense of "projection"—is no longer a necessary commodity. In an older show, a revival such as *The Music Man,* for example, vocal values from a more classical approach might still be needed, but for many of today's Broadway shows, sheer vocal beauty and consistency are not generally part of what it takes to get a job. In fact, the tone quality demanded in many contemporary shows can often be heavy, loud, strident, and emotionally intense. In shows such as *Jekyl and Hyde, Rent,*

or *Jesus Christ Superstar,* singers are asked to convey raw emotion in songs with extreme pitch and volume ranges. It is also possible for a performer to go directly from a job in a show such as *Rent* to one in *The Music Man* or vice versa (both are running as this is written). Consequently, a Broadway performer must be able to generate a variety of register and resonance (vowel sound) qualities at widely ranging decibel levels while still maintaining control over pitch and duration, all the while articulating consonants crisply and communicating the emotional message of the text. If there is no consistent singer's formant, no smooth legato, no evenness of tone, no enhanced resonance, it really doesn't matter.

Because this music is closely connected to speech, it behaves in a speech-like manner, albeit in a more exaggerated way.[6] In a contemporary pop/rock Broadway show, the larynx may ride up and down, the pharynx may widen and narrow, the tongue may flatten or rise consistently higher in the back of the mouth, and the configuration of the vocal folds could go from thick to thin and from short to long, from pressed to relaxed, all very rapidly. There could be almost none, a little, or a lot of constriction in the pharyngeal space, and the tone could be anything from nasal to breathy. Further, the breath could be used quickly or slowly, vigorously or gently, depending on the sound itself. Demands on the singer's technical versatility vary from show to show, within a show, or even within one song. Even though the singer may have no direct awareness of what is happening, the changes in the folds and the oral/pharyngeal cavity take place in response to the demands being made upon the voice by the mind.

Ethel Merman, a star on Broadway for more than thirty years, sang within a relatively small range of tonal qualities and pitches. While she was capable in her youth of floating a high soft phrase, as she aged the voice became more declamatory and less steady. Merman's voice was clear and trumpet-like, although it was not known for its beauty. She had a consistency that lasted throughout her long career, and one always instantaneously knew exactly who was singing. Mary Martin was perhaps Broadway's first "crossover" singer. She sang in a head register dominant, classical quality (Broadway "legit") in *The Sound of Music,* and belted her way through *Peter Pan* and *I Do! I Do!* She used a speaking voice quality for *South Pacific* and a purring-kitten sound in her smash debut hit song, "My Heart Belongs To Daddy." Both of these performers were successful, although each had a very different way of using her instrument.

During two recent NATS Winter Workshops on belting, the faculty could not agree upon the sound of the "belt" quality. Confusion arose out of the fact that there are several ways to take the chest register up beyond the traditional break and several ways to produce the vowels. It simply is not true that there is one way to make a "belt" sound, any more than there is one way to sing a classical sound. While subglottic pressure and decibel levels may be consistently high in belting,[7] the acoustic envelope might be more variable than is currently understood. More research is needed on many types of singers who use this quality in different musical styles.

In jazz, the music itself is of paramount importance. The singer can do away with words altogether when scatting and may deliberately "bend" the note, singing above or below the pitch, up or down in intonation, as an expressive device. The distortion of rhythm and tempo, vocal line, vibrato, and tone quality, are all part of the jazz singer's technical lexicon and can be used very effectively to stylize a phrase or an entire song. Laryngeal height and oral/pharyngeal shape will be variable, depending upon the material and the singer. Breathiness and nasality can be tools for vocal color or emotionality, and volume covers all possibilities. The artist is often able to chose what and how to sing, and sometimes where as well. Sheer volume output may be less than for Broadway and opera, but greater in terms of uniqueness and originality of sound.

Ella Fitzgerald's voice, while always light, was capable of great variance. She could be breathy, nasal, or clear in tone quality, deep and warm, light and delicate, or brassy and raucous in vocal quality. She was comfortable from very soft to very loud, from one end of her long range to another, at any speed from slow to fast. She was known for a remarkable intonation that never faltered. Sometimes Fitzgerald could change so much from song to song that her voice became almost unrecognizable. Truly, this was an instrument of great flexibility and strength, but not the same kind of flexibility and strength as that of a classical singer.

Could Merman have been trained to be an operatic singer? Could Fitzgerald? What would it have taken? Would Merman have benefited from keeping that bright

forward sound as her core, adding a greater roundness, depth, and use of breath? Would Fitzgerald have gained something by aiming for a consistent laryngeal depth, evenness of vowel sound quality and tone production? Should Mary Martin have stuck to her *Peter Pan* belt or her Maria soprano? One can only speculate on the possibilities.

In gospel singing, the emotions and the words are partnered equally. The great gospel singer, Mahalia Jackson, was always filled with devotional feeling as she sang. Gospel singing has also greatly influenced blues singing, which is a form of jazz, and has colored the style called R and B (rhythm and blues). R and B features the same emotional intensity and expressiveness of gospel singing with more ornate musical embellishments based upon blues chord progressions, and has rock and roll influences. Volume levels range from soft to very loud, and vocal range demands can be extensive. A typical gospel and/or R and B voice is rich and robust rather than delicate and ethereal.

Rock singing is primarily physical, energetic, loud, and speech-driven. The voice is just one aspect of a mix of sounds that is controlled electronically by the sound engineer. More than sophisticated vocal values, a singer needs a defined personal style, distinctive music, and hardiness of voice and body. Various kinds of rock and pop singing cover a wide range of characteristics. Much of the recorded music is manufactured through sophisticated technology. The voice can be digitized, sampled, overdubbed, and enhanced so that any vocal sound can undergo complete transformation. Live performance depends as much upon the sound system and engineer as it does upon the skills of the singers and musicians. The demands of rock music are unpredictable, but they can be very strenuous on both the throat and body. Although it is a point of contention as to vocal health and function, in most of today's rock singers, one could say "no low larynges need apply!"[8]

Each of these kinds of singing requires a different configuration of the source and filter, different activities in the articulators, and use of the breath. Varied vocal and musical goals, in turn, require more than one way to couple the mouth, throat, and vocal folds to the lungs and abdomen. Issues concerning whether or not these professional requirements are optimal, healthy, or artistic must be relegated to another, different, discussion.

Vocal tract shaping, including vocal fold behavior, subglottic pressure, and vowel quality, needs to be configured to conform to the demands of the music and the singer. Ideally, health should be the primary concern. However, musical or stylistic issues affected by the use of the instrument, such as pitch, range, or stamina problems, as well as issues of volume control, must also be considered. The singer needs to learn, by whatever means, how to release excess tension throughout the phonatory system, strengthen the requisite muscle groups, and coordinate the body and the mind to produce expressive music. There is no one correct "place" to put the tone, nor a correct "resonance" to produce. The tone needs to be supported by the breath to the extent that physical strain and wrongly directed effort are reduced within the larynx. The vocal folds and the surrounding musculature of the larynx, as well as structures of the oral/pharyngeal cavity, must be flexible enough and strong enough to produce the desired sounds.

Recognizing that the vocal tract is a very plastic instrument no matter who is singing or what is being sung, is a crucial part of voice pedagogy and performance. As long as teachers of singing look for one kind of vocal behavior or one type of production, an impasse concerning contemporary commercial styles of singing will continue to exist. The many and varied technical requirements call for resourceful, creative use of vocal technique.

NOTES

1. Johan Sundberg, *The Science of the Singing Voice* (DeKalb, IL: Northern Illinois University Press, 1987), 58.

2. Ibid, 97.

3. Oren Brown, *Discover Your Voice* (San Diego, CA: Singular Publishing Group, 1996), 5.

4. Jeannette Lovetri, S. Lesh, and Peak Woo, "Preliminary Study on the Ability of Trained Singers to Control the Intrinsic and Extrinsic Laryngeal Musculature," *Journal of Voice* 13, no. 2 (1999): 219–226.

5. Johan Sundberg, P. Gramming, and Jeannette Lovetri, "Comparisons of Pharynx, Source, Formant, and Pressure Characteristics in Operatic and Musical Theater Singing, " *Journal of Voice* 7, no. 4 (1993): 301–310.

6. Johan Sundberg, "Where Does the Sound Come From," in the *Cambridge Companion to Singing*, John

Potter, ed. (Cambridge: Cambridge University Press, 2000), 246.

7. Brown, 5.

8. Richard Middleton, "Rock Singing," in *The Cambridge Companion to Singing,* John Potter, ed. (Cambridge University Press, 2000), 28.

Jeannette Lovetri is a recognized expert in training music theater and popular singers. She has taught worldwide at national and international symposia, seminars, and professional congresses, and for master classes at universities and conservatories. Jeannette is Director of The Voice Workshop in New York, where she has maintained a private practice since 1971. Her students have appeared on and off Broadway, on network TV, in cabaret, major films, opera, national tours, and regional theater, as well as at Carnegie Hall and Town Hall, including the current Broadway productions of Rent, 42nd Street, *and* Annie Get Your Gun. *Currently Jeannette is adjunct professor of voice at New York University Tisch School for Arts. She is also Director of Vocal Studies for the award-winning Brooklyn Youth Chorus.*

Jeannette is a Past President of the New York Singing Teachers' Association (NYSTA) and is a member of the New York City Chapter of the National Association of Teachers of Singing. She is also a member of the American Academy of Teachers of Singing. She has worked in liaison with noted medical and clinical specialists retraining injured singing voices, and is currently a singing voice specialist consulting at The Grabscheid Voice Center at Mt. Sinai Medical Center, under the direction of Dr. Peak Woo, in New York. Jeannette has presented two joint workshops in New York with Daniel R. Boone, Ph.D., and has participated in research conducted by Dr. Johan Sundberg and the late Dr. Patricia Gramming of Stockholm in 1990 and 1991. She is primary author of research published in the Journal of Voice. *Jeannette was recipient of the Van Lawrence Fellowship given by The Voice Foundation and NATS in recognition of contributions to the fields of voice pedagogy and voice science.*

Since 1989, she has been on the faculty of Care of the Professional Voice *sponsored by The Voice Foundation. In 1991 she was guest teacher-in-residence at the Houston Grand Opera for Meredith Monk, her student, who mounted the world premiere of Monk's opera* Atlas *there. Jeannette has lectured for the British Voice Association in London, and taught master classes for West End theater performers at London's Actors' Center. In April of 1994 and again in 1996, she was keynote speaker and international guest lecturer for the National Cabaret and Music Theater Training Seminar in Sydney, Australia. In September, 1995, she was one of only six Americans to be a faculty teacher at the First Pan European Voice Conference (PEVOC) in London. In March, 1997, Jeannette was guest lecturer at Freie Universität in Berlin, addressing the Department of Speech, Audiology and Phoniatrics on healthy American singing. In March, 2000, Jeannette participated in a research study conducted by Dr. Ingo Titze at the University of Utah on the origins of vibrato.*

She has conducted master classes for NATS chapters throughout the country. She was the opening speaker at the April 2000 Conference, Science and the Singing Teacher, *in New York, cosponsored by NYSTA and Mt. Sinai Hospital's Grabscheid Voice Center. In March, 2001, she again lectured for the British Voice Association Annual Conference and was guest teacher/lecturer for Hamburg University Hospital Department of Otolaryngology in Germany.*
