



Belting, Range and Register: A Practical Introduction for Singers

belt (sl.) to utter forcibly (Eng.)

What enables some singers—both male and female—to sing forcibly above 392Hz, apparently without a register shift? Why do some singers experience vocal trauma when they try to ‘belt’ when others appear to do so with ease?

Discussion

In belting we often express the states of high excitement, anger, frustration and joy. There are various affects that go with belting and it is important to acknowledge any psychological response to both the sound and the feel of belting.

Everyone has within their auditory memory some recalled sounds of belting. These may be sung, shouted or called. Accessing that personal auditory cue is an excellent tool for finding your own ‘belt voice’.

Those who belt easily often have habitual speech patterns favourable to belting. From our experience these might be:

1. Healthy loud phonation in modal voice, ‘chest voice’ **and/or**
2. Healthy piercing phonation due to either a higher laryngeal position or the use of vocal ‘ring’ (singer’s formant, twang, and edge) in the resonances. People with these vocal patterns may be perceived as having ‘thin’ or ‘shrill’ voices.
3. Sometimes 1 and 2 appear together in the speech pattern, especially if the situation calls for more volume, for example, in a loud environment, outdoors, in anger or excitement. Children usually do this quite naturally.
4. Tongue placement for vowels may be high, possibly enabling formant tuning in the oral cavity.

For more detailed information on voice quality, including belting, in Musical Theatre singing see Gillyanne Kayes’ *Singing and The Actor*, Chapter 12, published by A & C Black (2000).

Some definitions of belting

Estill, 1988 [1]. ‘Each voice is distinctly different, yet the quality, when it is used, is undeniably belting. It is loud, brassy, sometimes nasal, always “twangy,” and yes, it sounds like “yelling”.’

Popeil, 1999 [2]. ‘... a general term meaning the use of speech-like or yell-like sound in any number of vocal styles including, but not limited to, rock, jazz, country, and R&B.’

Schutte and Miller, 1993 [3]. ‘... a loud sound with a bright, somewhat harsh quality that conveys the excitement of high tension’.

Bestebreurtje and Schutte, 2000 [4]. ‘The term *belting* is sometimes used in a broader sense, including other types of nonclassical singing that are also characterised by an “open” natural sound ... [here] belting refers only to the specific type of nonclassical singing characterized by the use of chest (or modal) register, with a CQ greater than 50%.’

We prefer the definitions of loud, brassy, speech and yell-like with a high CQ, and will be using these for vocal exploration in the workshop.

Vocal Registers

In today’s workshop we are considering the vocal registers in terms of laryngeal function.

Callaghan, 1996 [5]. ‘The term “register” refers to a range of pitch having consistent timbre. ... In singing the concept of register is concerned mainly with a change in voice quality at particular pitches, due to changes in the interdependent cricothyroid, lateral cricoarytenoids and vocalis muscles of the larynx.’

Harris, 1998 [6]. ‘A short fold can be made both thicker and stiffer ... in just the same way that the body-builder ... shows off his or her biceps muscles. The equivalent laryngeal phonatory gesture is the short “thick fold” ... and the vocal quality of one of “chest register”. ... Conversely, thinning the vocal fold by relaxing vocalis and allowing it to pay out while contracting PCA produces a thin, “falsetto” quality to the voice... In falsetto, increasing stiffness in the vocal fold is largely confined to the vocal ligament under the mucosa of the free border. ... This is not the same as “head register”, which is yet another voice quality demanding thin elongated folds. Although there are many other differences in the production of head and falsetto voice quality, the main physical difference between them at the level of the vocal folds (the sound source) is that in head register the muscle underlying the vocal ligament is tensed and stiffer than required for falsetto.’

Passaggio

The transition point between the registers. During this workshop we are considering the *passaggio* at 300–350Hz around F4/G4.

Callaghan, 1996 [5]. ‘An involuntary timbre transition is consistently found in the region of 300–350Hz for both males and females, This region is called “*primo passaggio*” for females and “*secondo passaggio*” for males. The *passaggio* seems to reflect the phenomenon of breaking into or out of the chest register. Speakers and singers of both sexes tend to shift register between 294Hz (D4) and 392Hz (G4).’

Practical Work

Practical work in the session explores the following:

A: Changes in the laryngeal mechanism that might facilitate belting; how can we access them as performers and teachers?

- (i) a long closed phase resulting from 'thick folds' is implied.
- (ii) a high laryngeal position.
- (iii) a change in posture possibly within the larynx as well as externally.

Harris, 1998 [7]. 'Belting near the top of the vocal register is necessarily fairly effortful as it involves tightening the vocal ligament and a stiff vocal fold body.'

Estill, 1988 [1] (whilst comparing belting and opera). 'From the data, the major difference between the two qualities appears to derive from laryngeal posture - the relationship of the thyroid to the cricoid cartilage. ... In fiberoptic examination of this subject belting, one sees only the posterior view of the arytenoids and the upper cricoid. ... The appearance is of a cricoid tilting anteriorly.'

Popeil, 1999 [2] (also noting changes in laryngeal posture from endoscopy). '... the thyroid cartilage is tilting forward, giving a clear posterior view of the arytenoid cartilages. ... [also the larynx in belting is] higher by approximately one and a half cervical vertebrae at the same pitch [and] a noticeable difference in spinal angling.'

In teaching belting we have found a distinct benefit from a change in the head-neck posture. This vocal tract alteration might account for the change of view in endoscopy, interpreted differently by Estill and Popeil. Both, however, agree on the exposed posterior view of the arytenoid cartilages, perhaps an indication of the shorter, thicker vocal folds we might expect to see in belting.

B: Changes in the filtering system or resonances that might facilitate belting.

The use of singer's formant to boost the volume (perceptually) has been identified by a number of researchers into belting and other vocal timbres. There may also be an increase in glottal resistance due to the narrowing of the laryngeal tube at the epiglottis.

Titze and Story, 1997 [8]. 'Not only does the epilarynx tube produce the desirable singer's formant (vocal ring), but it acts like the mouthpiece of a trumpet to shape the flow and influence the mode of vibration.'

- (i) Access 'twang' via noises such as taunting, quacking, cackling and yowling. Notice how this significantly increases volume without overloading the vocal folds.
- (ii) By adding twang to modal voice as you ascend the scale, you can match for volume as the vocal folds begin, necessarily, to thin. This may be what singers mean by 'mixing' vocal registers.

C: Changes in the support mechanism that might facilitate belting.

- (i) A widened pharynx can stabilise the mechanism in high-energy vocalisation.
- (ii) Increasing the voice-body connection by grounding and ‘anchoring’ the body, especially from the back, helping to ‘spread the work-load’.
- (iii) Decreasing airflow to avoid an overload in glottal resistance (‘thick folds’ and a tightened aryepiglottis already contribute to high SGP). Therefore a high clavicular breath is recommended. This has the additional benefit of setting the larynx high. (Tracheal pull from low abdominal breathing tends to lower the larynx.)

NB Because in vocalising one mechanism tends to have an effect on the other, **A** (ii) and (iii) might also be categorised under **B** and **C** respectively; **C** (i) might be categorised under **B**.

References

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