



When Practice Definitely Does Not Make Perfect

The Art and Science of Vibrato

a conversation with Aunty Muriel

More Tea, Aunty?

Reading Aunty Muriel's blog post **Vibrato is an ORNAMENT!** I found myself spitting in full-blooded agreement with her frustrations over the heavy use of vibrato commonly produced by performers who really should know better. Like Aunty Muriel, I cannot abide performances that include a supplementary game of 'Name That Pitch'. Heavy vibrato for me is as unskilled and inexperienced as scoring the head of a crotchet to cover both middle C and D at the same time. Such childlike theory practice is drummed out of musicians at Grade 1.



It was a welcome interlude to vent a little bile with my lovely Aunty M as I fumed in a pleasurable mixture of sympathy and incredulity. But once the venom was spent, 4 key questions entered my head:

1. Why do we use vibrato?
2. How is it produced?
3. Why on earth is the overuse of vibrato left untouched or unnoticed by so many singing teachers?
4. Can anything be done to change this?

As a vocalist, I was also interested to hear how vibrato is achieved on a reed instrument, and my hot little hands began beaver away little messages to Aunty Muriel who graciously invited me to appear as a guest writer on her esteemed blog.

So with grateful thanks to dear Aunty M, I will try to straighten out the mysteries of the art and science of vibrato by taking a closer look at exactly what it is and why we use it with a particular focus on singing. I will then examine a few different ways it can be produced, and explore some of the issues that can cause some performers to get trapped into over-egging the pudding.

One Lump or Twelve?

Employment and appreciation of vibrato can be argued to be subjective to a certain extent. It can add sweetness to the tone, rounding the notes and adding an emotional depth to a phrase that can be incredibly effective and moving. Overdone, it can be like a cup of tea with far too many sugars - unpalatable and sickening. To the inexperienced listener the sweetness of a heavy vibrato can be deceptively inviting, but to the advanced ear, too much can overwhelm the palate and leave the listener feeling like their ears have been syringed using caustic soda.

There is relatively little agreement between teaching circles about how vibrato is best (i.e. safely, efficiently and effectively) produced. By many it is considered an

artistic choice and as such it is often considered personal to the individual. In such cases, teachers often feel afraid (or helpless) to tinker with it.

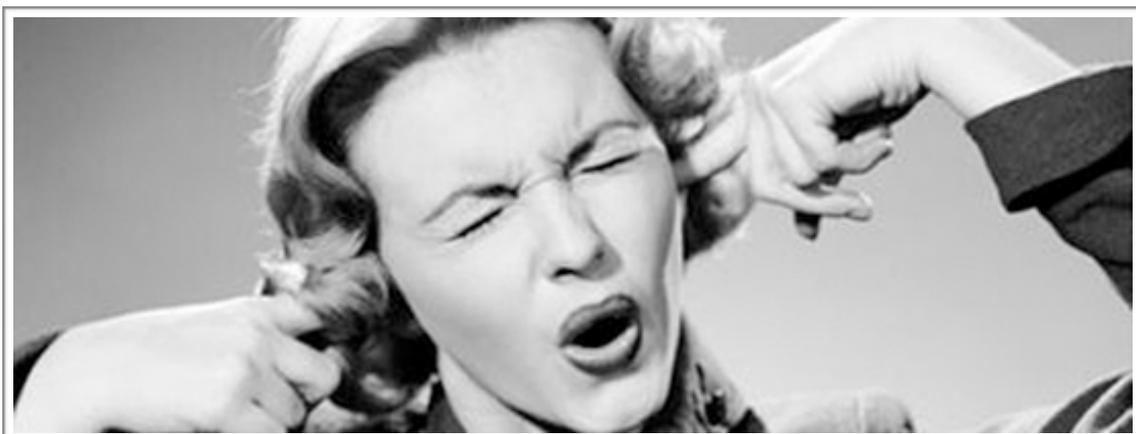
Although I don't wish to tamper with personal taste, there is much scientific evidence on the safe production of vibrato for the vocalist, but first let us consider what it is and why we use it.

The Wavering Voice

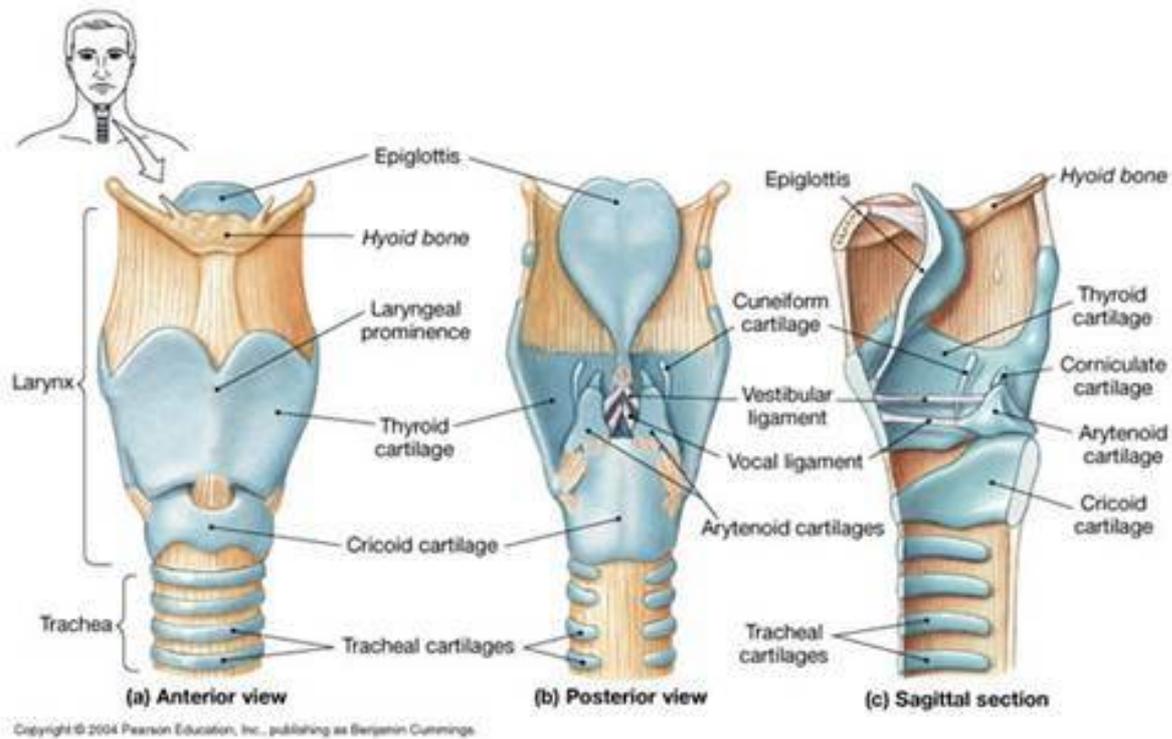
Definitions of vibrato state that it is achieved through oscillations in pitch and/or pulsations of breath. As a result, the tone produced fluctuates. The rate and pitch can be controlled by the performer in various ways depending on the instrument. But why do we use it at all?

If we assume that the oldest expressive human instrument is the voice, and as a result our appreciation of all melodic music is to some extent interpreted as a form of voice (however loosely), then we can begin to pinpoint the reasons behind the application of vibrato in music.

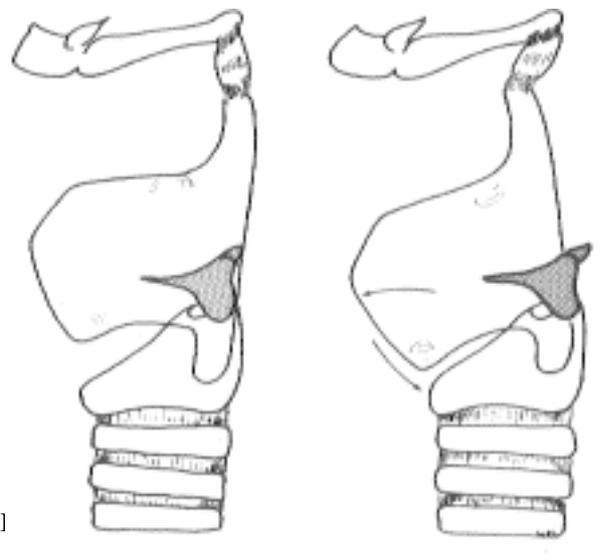
Vibrato is naturally present in the human voice in certain emotional states - particularly in states of upset and grief (not to be confused with the tremolo effect that can be found in fear or shivering). In these states, there is a very tangible physiological change in the larynx. In the diagram below, notice the



thyroid and cricoid cartilages. In particular notice the sagittal section on the right and the positioning of the 2 cartilages. Here the thyroid cartilage is in a 'vertical position'. This is the position of a healthy larynx at rest.



When we are expressing sadness or upset the thyroid cartilage tilts forward, closing the gap between it and the slightly lower cricoid cartilage. This in turn affects the length and body cover of the vocal folds (often referred to as vocal cords). They become longer and thinner. These physiological changes, alter the way that the vocal folds respond to the breath and cause an oscillatory motion as they lap together during phonation. When applied to the speaking voice this quality is commonly heard in the whining voice children (and adults) use when they are upset. In fact whining is a good way to access this 'thyroid tilt' before attempting to apply it to singing. Once in a singing context can create a natural vibrato that is emotive, even and unforced. It is efficient.



A side view of a vertical thyroid cartilage position versus thyroid tilt

Please note, reference in this blog to 'thyroid tilt' is in relation to the thyroid cartilage and not the thyroid gland which is a mass of soft tissue found in front of and below the thyroid cartilage (not shown in this post).

The Social Vocalist

As social animals, we often mirror each other physically and vocally. The sympathetic friend listening to a tale of woe will unconsciously adopt a similar vocal posture to the complainant and echo their tonal qualities. The same effect also occurs in musical production and appreciation. When moved by a singer using thyroid tilt many listeners' own thyroid cartilage will tilt forward in sympathetic motion as they instinctively recognise and respond to this emotive quality of the voice. The listener has formed a connection with the artist, the music or both.

When vibrato is at its most effective it moves us. We respond to the sound as some form of a cry. It should come as no surprise then that thyroid tilt is also



referred to as 'cry', or (if combined with a lowering of the larynx as found in classical singing), 'sob'. Thyroid tilt can be practiced and controlled, and then added in varying degrees to a singer's performance. It gives a rounded edge to (but does not dominate) the tone. It does not put the vocal folds at risk of trauma or fatigue, and is a very useful technique to 'mark through' practices or save the voice when already suffering from vocal fatigue or trauma - an incredibly useful tool for any vocalist.

Other Brands Are Available

There are other ways of achieving vibrato, none of which I would recommend for the singer. Whether any of them are considered good practice amongst woodwind or brass players is beyond my current knowledge.

A predominantly abdominal or laryngeal vibrato can be achieved through controlling airflow using either the abdominal wall, the larynx, a combination of both, or some other part of the vocal apparatus (eg lips, tongue or jaw) to interrupt the airflow. A steady and even interruption of air flow will create a pulsing tone. However, for a vocalist, this type of vibrato is potentially damaging to the voice. The sub-glottic pressure created through a forced lifting of the diaphragm can result in a widely pitched vibrato which may leave the listener unsure of exactly which note is being sung. More importantly it can cause constriction within the larynx, resulting in a spiral of building pressure which can cause vocal strain and increase the risk of fatigue and trauma to the vocal folds.

As a flautist, however, I have used this technique to create a vibrato that is more a pulse in rate rather than an oscillating pitch. In this instance, as the vocal folds are not producing sound, there is less (if any) risk of vocal trauma. Whether or not this would be considered a correct use of vibrato for the instrumentalist, I am unsure.

A nervous bleating singing vibrato can sometimes occur as a result of tension at the root of the tongue mixed with laryngeal constriction, inefficient closure of the vocal folds and/or overuse of breath pressure. This can result in a kind of performer's 'bleat' (presenting as a tremolo) which is uncontrolled and as such has little place in the concert hall as a substitute for vibrato.



Vibrato as a result of shaking (sometimes the head, the jaw or the tongue) is often seen in children who are attempting to emulate their musical idols. They can hear the oscillating sound of vibrato and quite often believe that shaking is a way of producing this effect. It is totally unreliable and unsightly for a singer to perform in this way, and produces unnecessary tension around the vocal apparatus which can impede performance and, again, risks vocal trauma and fatigue.

The final vibrato I would like to have a look at is as a result of a slackening of the muscles around the larynx (often associated with the ageing larynx). This can result in a wide and uncontrolled vibrato which is revered in some cultures as the epitome of vocal beauty. These fluctuations in pitch can become so heavy that exact pitch becomes indeterminate. It is not particularly efficient and is a sign of an untuned voice.

So if vibrato is perfectly possible to explain and teach and there is a healthy way for it to be achieved, why on earth do so many singing teachers leave a heavy vibrato unchallenged? There is a much wider issue here - namely one of a pedagogical nature that can be applied to many issues of learning.

The Temperamental Teacher

To examine this problem, we have to first consider how singing teachers become so in the first place. Most have shown promise from an early age. Whether it be in a school choir, at church or similar. They show an aptitude for and love of singing usually without any pedagogic knowledge. At some point they will have lessons. This is where things can easily get messy.

Each singing teacher will usually have had a small number of teachers themselves, in some cases only 1.



This is well and good if the tuition seeks to explain the voice from a number of different angles - anatomically, scientifically and artistically. However, the number of singing teachers I have encountered who have no idea what the vocal cords even look like, let alone how the larynx works, is utterly horrifying.

It is perfectly possible for singers to achieve a healthy and effective sound without such knowledge. However, for a singing teacher to willingly remain in the dark over such matters I find utterly inexcusable. Such teachers bluff their

way through lessons. They may be excellent singers themselves and so feel justified to teach, but their lack of knowledge particularly shows itself when teaching artistic effects such as vibrato.

These types of teachers usually deal heavily in imagery. This can lead to the student becoming confused and bamboozled by terminology that makes little or no sense and thus, they have very little hope of achieving anything. How many singers have been told to "support the voice", or "land on the note", "sing through the forehead" or even "sing from the buttocks"? (Yes, you did read that last one correctly.) How many of these students can honestly say they have fully understood the instructions they were given? All of these phrases I have heard uttered from the mouths of respectable singing teachers with little or no further explanation. I've heard teachers use phrases such as "let the note spin to the ceiling", again with no further instruction on how to achieve this. It is the pedagogical equivalent of throwing a child into a swimming pool and just saying "swim".

I am not suggesting that imagery has no place in the teacher's toolkit - it can work incredibly well. But without a solid grounding in tangible theory it can be as useful as the proverbial chocolate teapot, leaving students floundering in a swamp of half-baked, well-meaning but ultimately ineffective instructions that do anything but instruct. How many students have found themselves in this position mid-lesson, with very little idea of how to achieve the desired effect and have resorted to simply attempting to copy the sound their teacher is making to the best of their ability? Even if they do manage to perform the task in hand, it is usually by chance than design, and even then they are left with a befuddled and wooly concept that they cannot quite grasp - or, more importantly, reproduce.



So when a student presents to this kind of teacher a heavy and wide vibrato, it may be the case that they attempt to change it. Instructions like "remove" or "reduce the vibrato" are meaningless to a student who doesn't know a) how vibrato works or b) how to control thyroid tilt. Such teachers eventually give up if they cannot find a satisfactory method of explaining.

In some cases, vibrato is left alone simply because the teacher realises they have no idea how to work with it and so consciously moves their attention elsewhere. Such teachers often have an awareness of their lack of knowledge but fear the uprooting of their position or ego if the flaws in their knowledge are brought to light. Indeed it is terrifying to continue to be open to learning as a teacher - terrifying, but utterly vital.

These problems are compounded if students of these teachers venture into teaching themselves. Unless they have enough thirst to seek higher quality scientific instruction alongside their artistry, they in turn will spawn a new generation of singers who also don't quite understand what they are doing. These performers are doomed to repeat cycles of relatively meaningless practice which lead them nowhere. If they, too, turn their hand to teaching, the cycle of ignorance continues. There ought to be a Philip Larkin poem in here somewhere.

Rebuilding Paradise

It is my sneaking suspicion that much of the common use of overblown vibrato is as a direct result of such teaching - a practice that has built itself on image-heavy but knowledge-shallow foundations. Pedagogical towers built on such foundations are structurally unsound and begging to be replaced with solid educational architecture. If we combine Art with Science, it is possible to find an equilibrium between technique and creativity. In order to achieve this we must begin to seek empirical evidence to answer some of our artistic questions. We must be ready to drop any knowledge we have gained so far and relearn thoroughly, even if this means going back to the drawing board.

