



THE VOICE  
FOUNDATION

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# The Voice

WITH AN AUDIBLE

GASP



Part II



## The Voice of the Editor

### WITH AN AUDIBLE GASP! PART II

In the current issue, the authors continue the discussion on inhalation phonation in action with illustrated videos!

**KIMBERLY STEINHAUER, PHD**  
PRESIDENT, ESTILL VOICE INTERNATIONAL  
PITTSBURGH, PA



#### Page 3

*Inhalation Phonation in Singing*  
**Jeanie LoVetri**

#### Page 6

*Artistic use of Inhale Phonation and  
Intentional Voice Distortions*  
**Mauro B. Fiuza**

#### Page 8

*Inhalation Phonation:  
An Artistic Perspective*  
**Alessandro Campone**

Way back in the Fall of 2021 you may have opened the Voice Foundation Newsletter exploring inhalation phonation with an audible gasp of Awe, literally! In that issue we learned about clinical, pedagogic, and scientific perspectives on vocalizing on an inhale. A thought-provoking email from one of our current authors, Jeanie Lovetri, ‘inspired’ me to seek other international experts to share their experience with the artistry of inhalatory phonation and other non-traditional sounds. For our follow-up issue, Jeanie is joined by Mauro Fiuza and Alessandro Campone to discuss and share vocal performance videos of inhalation phonation in action. I’ll start by sharing one of my favorite artistic improvisations with the “Singhale” (my shortcut for “sing on an inhale”). Click on the link to “breathe in” the amazing Bobby McFerrin singing his rendition of “Blackbird” by The Beatles.<sup>1</sup> Then, calmly exhale as you flow into the realm and repertoire of inventive voicing.

1. nanymoa. Blackbird Bobby McFerrin. YouTube. <https://youtu.be/37DHXrFfwrE?t=5>. Published January 5, 2008. Accessed October 13, 2022.







## Inhalation Phonation in Singing

### Jeanie LoVetri

Artist-In-Residence, The LoVetri Institute for Somatic Voicework™, Baldwin Wallace University, Community Arts School  
Director, The Voice Workshop, New York, NY

In classical singing, creating an audible sound while inhaling is generally regarded as an indication of poor technique. Singers are encouraged to inhale as quietly as possible to help the breath move smoothly past the vocal folds. In other styles of singing, a different choice might be desired. In fact, it might be the opposite of quiet inhalation. Ingressive phonation or inhalation phonation has not generally been a part of mainstream musical vocalization; however, it can be found in many places as artistic expression.<sup>1</sup>



If we are startled, we can easily make a sound, as a gasp, as we draw air into our lungs so it's not as if the gesture itself is extremely difficult to utter. In the Inuit culture in Alaska, singing alternately with ingressive and normal phonation is a kind of vocal game. Performers explain this as being part of their culture, passed down from one generation to the next.<sup>2</sup>



The vocal folds still vibrate on ingressive phonation/singing, and it is possible to learn to control pitch, making it both deliberate and accurate. Ingressive phonation done gently is not known to be harmful to the vocal folds and exploration of this unusual mode of phonation can serve a useful artistic purpose. It requires practice to be pitch accurate on both an inhalation and a normally sung exhalation, but it is quite possible to become an expert vocalist “backwards” as well as “forwards.”

It might help to understand ingressive singing if it is given a broader context. Seen as a part of creative vocal use it becomes a texture and a color in a sound palette. Artists such as Joan La Barbara have built a career using the voice in a wide range of sounds. Working with many of the 20<sup>th</sup> century's most celebrated modern composers, La Barbara established herself as an expert of challenging vocal music. She demonstrated ingressive singing in her “Circular Song”, sliding through a range of pitches ascending and descending while making sound continuously.<sup>3</sup>





Continued from Page 3



A contemporary of La Barbara's is Meredith Monk, also known for her use of extended vocal techniques. Monk's vocal pieces frequently use both unusual vocal patterns and musical textures to create landscapes of sound. Her piece, "Facing North," was written as a duet for herself and a male partner exploring ingressive and normal singing to express the cold landscape of Banff, Canada, her location when she wrote the piece. *Long Shadows*, an excerpt of "Facing North," calls for precise pitch control as the two

*It requires practice to be pitch accurate on both an inhalation and a normal sung exhalation, but it is quite possible to become an expert vocalist "backwards" as well as "forwards."*

vocalists skillfully alternate inhalation phonation with normal singing while controlling the volume. Monk says this about the piece: "In the duet, 'Facing North,' I specifically wanted to explore precisely pitched inhalation. I made dyads of long tones both on the inhalation and exhalation for the two singers in the piece to perform simultaneously. Since most of the intervals were open ones, (perfect 4<sup>th</sup>s or 5<sup>th</sup>s) the tuning had to be impeccable. My original duet partner, Robert Een, and I found that keeping the back of the throat very open and relaxed during the phonated in-breaths helped the breath to move and flow through, allowing the tone to be clear and

accurate. There were passages of tones limited to exhalation between the ones of singing both on the in and out breath so that we didn't hyper-oxygenate! Allowing our upper bodies to follow the movement of the breath also helped the freedom of the sound." The work maintains a moderate volume and is uniform in its use of the vowel /a/. The example given here, sung with Theo Bleckmann, is static but in normal performance mode it includes Monk's choreography which is slow and deliberate.<sup>4</sup> The ingressive phonation did not inhibit the physical movement of the vocalists.



Some speech language therapists use ingressive phonation to assist the throat to relax. As Monk observed, this phonatory pattern works best when the throat remains in a neutral position, and the air is allowed to move freely on both an in and an out breath/sound. It can assist in releasing hyper-functional speech.<sup>5</sup>

Ingressive phonation is also found in some beatboxing. In this type of singing, a vocalist uses the lips, mouth, throat, tongue and use of air to create rhythm and multi-layered percussive sound. To keep the sound continuously moving in a specific tempo,



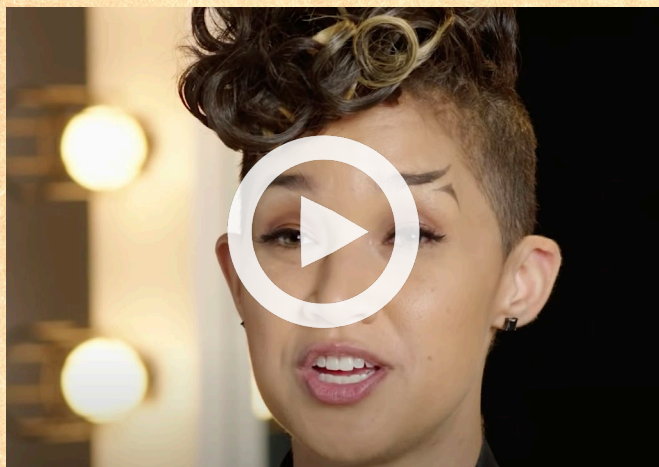


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ingressive phonation can be worked into the singer's vocal production.<sup>6</sup>

Ingressive singing is an interesting vocal expression worth serious investigation. We invite you to view the video clips on YouTube.



1. TEDx Talks. Punk Inuit throat singer | Tanya Tagaq | TEDxMet. YouTube. <https://youtu.be/dumvYzfuTow?t=318>. Published September 30, 2015. Accessed October 13, 2022.

2. Hochschule für Musik FRANZ LISZT Weimar. Katajjacoustic - Traditional Throat Singing of the Inuit. YouTube. <https://youtu.be/fPI2dXcn8Vw?t=616>. Published December 9, 2015. Accessed October 13, 2022.

3. STUDIUM GENERALE RIETVELD ACADEMIE. JOAN LA BARBARA: Circular Song, Solitary Journeys of the Mind and Windows. YouTube. [https://www.youtube.com/watch?v=H\\_c3rLTqdY8&t=810s](https://www.youtube.com/watch?v=H_c3rLTqdY8&t=810s). Published January 30, 2015. Accessed October 13, 2022.

4. mmonkhouse. Meredith Monk-Long Shadows Live with Theo Bleckmann. YouTube. <https://youtu.be/WbWAakACi7s?t=160>. Published January 1, 2000. Accessed October 13, 2022.

5. Kate Emerich. Inhalation Phonation Task Hierarchy. YouTube. [https://www.youtube.com/watch?v=\\_LSlnHY67SE](https://www.youtube.com/watch?v=_LSlnHY67SE). Published November 6, 2021. Accessed October 13, 2022.

6. WIRED. 13 Levels of Beatboxing: Easy to Complex | WIRED. YouTube. [https://www.youtube.com/watch?v=Efk\\_z9kg2MU&t=1s](https://www.youtube.com/watch?v=Efk_z9kg2MU&t=1s). Published March 17, 2020. Accessed October 13, 2022.

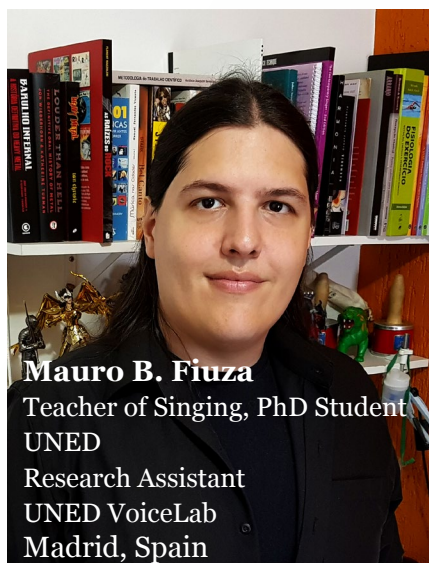
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*“Singing with Intentional Voice Distortions requires an extended use of the voice that adds many other layers of voice qualities to those used in non-distorted styles.”*

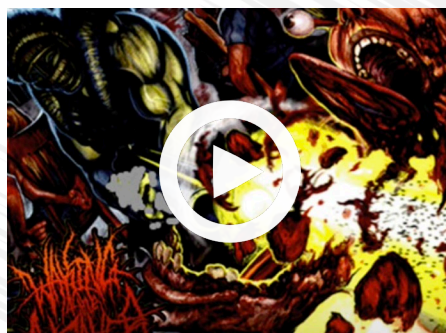
## Artistic use of Inhale Phonation and Intentional Voice Distortions



Inhaled Phonation (IP) provides many physiological, clinical, and pedagogical benefits for speaking and singing. Here, IP will be addressed with respect to its applications in the interpretation of sung repertoire, for both artistic and expressive purposes.

For example, IP is part of the aesthetic characteristics of some Extreme Metal styles and Inuit traditional singing. In metal music, IP is the basis for techniques known as “inhale scream” or “inhale pig squeal.” However, it is important to point out that these are not the most usual ways to phonate while singing metal. Also, one could argue that inhaled singing is not the favorite voice quality among most metal fans. In addition, there is no consensus among

teachers and singers of metal on whether such techniques are vocally healthy. Nevertheless, the chaotic and visceral perceptual characteristics of IP can potentially create interesting vocal effects<sup>1</sup> even to non-metal music styles.



In Inuit throat singing, IP is used in their “katajjaq” voice games. In this style of singing, two performers stand face-to-face creating inhaled and exhaled sounds.<sup>2</sup>



In the above-mentioned examples, IP is performed as an intentional voice distortion (IVD), which means that the singer produces rough/harsh/hoarse-like sounds deliberately. As a specialized IVD teacher, one of my pedagogical concerns

is to recognize which type of distorted voice a singer wants to create, as rock/metal singers are often specific on the type of voice quality they intend to produce. There are many strategies for distorting singing depending on how it is produced, and each one of them leads to different perceptual outcomes.

There are few classifications for IVDs, depending on whether they follow perceptual, acoustical, or physiological characteristics. Physiologically speaking, IVDs can be classified according to the oscillating structures that affect or generate the voice source, including the vocal/ventricular/aryepiglottic folds, arytenoid/corniculate/cuneiform cartilages, and their respective covering mucosa, epiglottis, and/or uvula. Such oscillatory structures may present different vibrational modes, whether periodic, multiperiodic, and/or aperiodic. Speaking from both perceptual and acoustical points of view, the type of vibration and the oscillator structures will affect the presence/absence of a clear pitch, noise components and harmonic structure of the sound, thus, heavily impacting on overall voice timbre. In addition, IVD quality will be different according to the singer’s vocal tract shape, subglottal pressure, and, when a periodic fundamental frequency is present, regular phonation type and vocal register. Summarizing, singing with IVDs requires an extended use of the voice that adds many other layers of voice





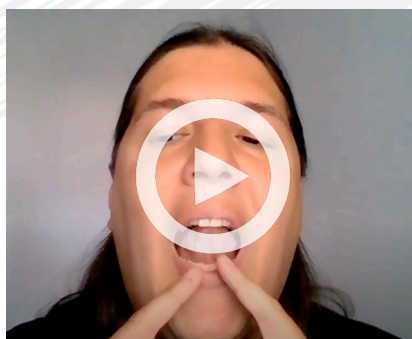
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qualities to those used in non-distorted styles.

IVDs are usually performed on exhalation and in most cases, but not all, engage supraglottic structures. Such vocal behavior might be erroneously interpreted as dangerously hyperfunctional. Studies on the vocal health of IVD singers are scarce but suggest that those with dedicated IVD training often present no vocal impairment (Guzman et al., 2013; Aaen et al., 2022). In my experience, corroborated by many other IVD teachers' opinions, it causes no harm when properly performed. However, during its development, extra care is recommended; beginners in IVDs are susceptible to mistakes and overuse while learning these new vocal adjustments. When properly performed, IVD can even contribute to the improvement of non-distorted phonation; overall control and proprioception of the vocal instrument seems to become enhanced. On the one hand, although some IVDs may imply greater airflow resistance than non-distorted singing, one cannot impede airflow continuity. On the other hand, all engaged structures should be able to move freely.

To fill these requirements, I find it helpful to apply counterintuitive antagonist practices during IVD training, such as semi-occluded vocal tract exercises (SOVTE) and inhale fry phonation (IFP). Both can be used in between IVD exercises, so that muscle contraction does not become muscle tension. Singers must be able to approximate the required structures to intentionally produce distortions, but also to release them immediately after.

When inhale scream is the artistic goal of the singer, practicing IFP can constitute an effective strategy<sup>3</sup>.



It may take a while to master such sound qualities, especially for those who are not familiar with IFP. However, one must respect the golden rule that no pain is allowed. Independently of the IVD, its use in singing should not hurt nor cause damage to

the voice. Any sign of irritation should be interpreted as a sign of poor technique, involving over pressure and/or effort.

1. TitleBloodsplattered Satisfaction-Waking The Cadaver. YouTube. <https://www.youtube.com/watch?v=LdvHyIuBkq0>. Published February 8, 2009. Accessed October 13, 2022.
2. Beanz MacDoogal. Tanya Tagaq- The sounds of throat singing. YouTube. <https://www.youtube.com/watch?v=KNb2ZDjeiU4>. Published July 7, 2009. Accessed October 13, 2022.
3. Mauro Fiuza. Inhale Scream (TVF - Inhale Phonation and Intentional Voice Distortions). YouTube. <https://youtu.be/1QgDvpZxddU>. Published October 5, 2022. Accessed October 13, 2022.

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## Inhalation Phonation: An artistic perspective Alessandro Campone

Teacher of Singing, Vocaltraining International  
Rome, Italy

The benefits of inhalation phonation (IP) have been known for some time. Clinical studies and subsequent practical applications to solve eventual problems - or simply to improve vocal performance - have been successfully presented over the years. Beyond these indisputable advantages, are there any direct applications in the artistic field of the sounds derived from this practice? Certainly. Art always illuminates science. Imagination is the only force faster than light. This article explores the artistry of inhalation phonation.

In recent years, I studied and then presented workshops on the use of non-traditional sounds, such as IP, in various musical styles. Then I gradually included these effects in my repertoire, as they were absolutely not part of my clean and clear vocal style. I'll tell you a secret: these sounds are everywhere, found in contemporary music and in our daily vocal behaviors. Despite this, these sounds are still seen with a certain suspicion and fear in the field of vocal teaching. Usually, artists don't care and use them anyway.

There are genres that live in territories very far from the canonical land of "singing." Some extreme sub-genres of metal, for example, feature several unconventional sounds. But don't we find others also in Gospel or in the Blues? We could call them vocal effects. Some of them may be clean while others have distortions. In turn, the distortions are divided into two large families: 1. aperiodic sounds (fundamental frequency not clearly recognizable), and 2. periodic sounds (clear fundamental frequency with some interharmonic noise).

Continued on page 9




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Continued from page 8

But let's get back to the starting point: how can inhalation phonation help us in achieving some of these effects? Below are two options with proposed physiological movements involved in producing non-traditional sound.

*"I'll tell you a secret: these sounds are everywhere, found in contemporary music and in our daily vocal behaviors."*

### 1. Inhalation Scream without pitch

The scream without pitch is an aperiodic distortion. It is present in very extreme genres such as death metal and black metal, very distant from my artistic experience and my personal tastes. How can we produce it? Let's start with a vocal fry and then try to fry while inhaling. Some people may find it difficult at first, often due to muscle stiffness and too large and quick breath. A tip is to prepare for a start of the glottal sound to promote the adduction of the true vocal folds as when we inhale in amazement and then inhale slowly. Then we try to alternate vocal fry on an inhalation and then exhalation. When we begin to perceive all of the other structures in a state of relaxation, we try to increase the number of effort in the muscles of the forced inspiration that coincide with muscles of the head and neck. We can change the height of the larynx to produce a brighter or darker "noise" (there are no distinct harmonics). Now, try to prolong the inhalation as much as you can, perhaps exhaling completely before the exercise. The sound we seek is a macabre sound of terror and fear. It must inspire horror and emotions that are anything but positive. In fact, this effect finds its greatest applications in very extreme genres.



Click on the video above to hear an example of an Inhalation Scream Glide<sup>1</sup>

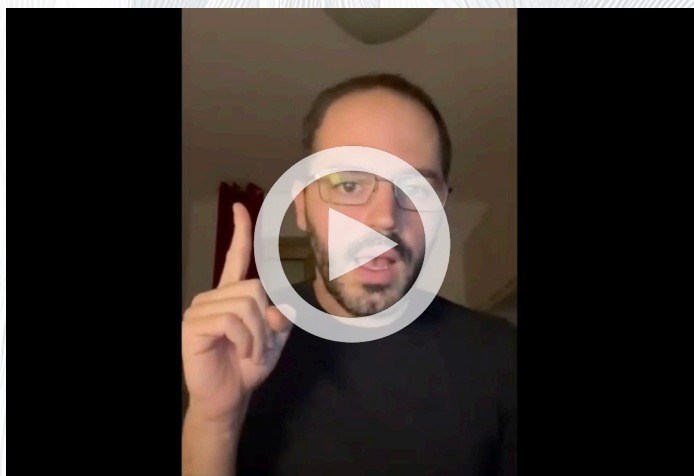
### 2. The Inhalation Whistle

The Whistle Tone can be produced in many ways. In this case, the inhalation sound is only a facilitator since without an endoscopy it is difficult to understand the position of the source and filter that elicits the whistle. Some postulate that "reed" mechanism, stiff body-cover or vibration of only anterior True





Vocal Folds is responsible for the whistle. To experiment with this sound, start with an inhalation on vocal fry with a high larynx to facilitate access to the upper part of the range. You will have to speed up the inhalation this time. Careful to avoid working too hard in muscles we don't want to activate. Relax and search for the a-periodic sound starting from the vocal fry again. It is counterintuitive to associate such high notes with almost no effort. Once it starts "whistling," try changing notes and/or vowels. This tone can be useful to attempt Mariah's covers or to converse with the dolphins.



Click on the video to hear an example of Inhalation Whistle<sup>2</sup>

In conclusion, inhalation phonation opens the door to unconventional sounds while minimizing risks and even provides some benefits for speaking and singing. IP can be a first step in producing those vocal effects and sounds far from what is commonly understood by the term "singing." Furthermore, in my personal experience I have discovered that these sounds considered "dangerous" actually increased awareness and control for my "safe" clean vocal productions.

1. officialyounsunnah. Youn Sun Nah - Enter Sandman. YouTube. <https://youtu.be/dVehcCuwZeA?t=198>. Published February 8, 2011. Accessed October 13, 2022.

2. Alessandro Campone. Inhalation whistle protocol. YouTube. <https://www.youtube.com/watch?v=djP1AujSPtQ>. Published October 14, 2022. Accessed October 14, 2022.



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