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Jane Seaman



Chuck Hudson



Narciso Solero

NYSTA Events 2020-2021

Fall Season Opening Event and Reception Musical Theater Master Class with Jane Seaman

Domingo Hall at National Opera Center, New York City Sunday, October 25, 2020 2:30-4:30 PM *EDT*

Holiday Event and Reception Josephine Mongiardo Great Coaches Series Masterclass with Chuck Hudson

Arias and Action – Auditioning for Opera & Musical Theater Domingo Hall at National Opera Center, New York City Sunday, December 6, 2020 6:30-8:30 PM EST

Winter Online Event with Narciso Solero

Turning your Ordinary Studio into an Extraordinary One! Sunday, February 21, 2021 8:00-10:00 PM *EST*

Spring Event: Teaching Voice Students from East Asia

Understanding the Linguistic Challenges & Advantages Unique to Native Mandarin, Cantonese, Korean and Japanese Speakers with Ryu-Kyung Kim, Stephen Ng, & Sahoko Sato Timpone Pearl Studios, New York City Sunday, May 16, 2021 2:30 PM-4:30 PM EDT



Ryu-Kyung Kim



Stephen Ng



Sahoko Sato Timpone

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by Brian Manternach

Introduction

In 1999, voice professor and pedagogue John Nix wrote an article in the *Journal of Singing* called "Lip Trills and Raspberries: 'High Spit Factor' Alternatives to the Nasal Continuant Consonants."¹ The article outlines the benefits of these particular semi-occluded vocal tract (SOVT) exercises, which may have advantages in the singing voice studio that are not shared by the nasal continuants /m/, /n/, and /ŋ/. Lip trills and raspberries were jokingly labeled "high spit factor" exercises by Nix's late mentor Barbara Doscher due to the natural consequences that occur when airflow meets saliva, as these exercises tend to encourage.

However, Nix also points out times when lip trills and raspberries should not be used, primarily when students are sick with any form of upper respiratory infection. He says, "The risk of transmitting viruses and bacteria via aerosolized saliva and mucous is too great during this time."² Given our current concerns amid the COVID-19 pandemic, Nix's advice may be more important than ever for studio voice teachers. According to the Centers for Disease Control and Prevention (CDC), the person-to-person spread of COVID-19 occurs via "respiratory droplets," which are produced when an infected person coughs or sneezes.³ When people are in close proximity (within about six feet, as is common in voice studios), these droplets can land in the mucus membranes (mouths, noses, or eyes) of those who are nearby and may be inhaled into their lungs. The CDC also believes it is possible for people to contract COVID-19 by touching a surface or object that has the virus on it and then touching their own mouths, noses, or eyes. Given the directional force that often accompanies a well-produced lip trill or raspberry, it stands to reason that these SOVTs could introduce respiratory droplets into the air in a way that is similar to coughing and sneezing. Therefore, it may be necessary to explore vocal exercises with a lower "spit factor."

In this article, I will examine a variety of SOVT exercises based on their vocal effectiveness as well as their potential risk to spread communicable diseases. I will then explain how the "straw in water" exercise meets the criteria of a highly effective SOVT exercise while posing minimal risk for spreading viruses. Lastly, I will offer practical instructions on how straw in water may best be used by singers and voice teachers. ¹ John Nix, "Lip Trills and Raspberries: 'High Spit Factor' Alternatives to the Nasal Continuant Consonants," *Journal of Singing* 55, no. 3 (January/February 1999): 15-19.

² Ibid., 18.

³Centers for Disease Control, "How Coronavirus Spreads"; https://www.cdc.gov/coronavirus/ 2019-ncov/prepare transmission.html (accessed March 26, 2020).



John Nix

Benefits of SOVT Exercises

Semi-occluded vocal tract exercises have long been used by singers, actors, and those engaging in voice therapy. Any teacher who has asked a student to vocalize on a lip trill or to hum a five-note pattern has used SOVT exercises. Straw phonation, in particular, has become a favored exercise over the last decade, due in part to voice scientist Ingo Titze's widely viewed video demonstration on the National Center for Voice and Speech (NCVS) YouTube channel.⁴

The impact of SOVT exercises on the voice are well documented in voice journals and also have been noted in more mainstream media like *Vox* and on NBC's *Today* Show.⁵ As Titze and Katherine Verdolini Abbott outline in *Vocology: The Science and Practice of Voice Habilitation, SOVT* exercises can help "stretch and unpress" the vocal folds, lower phonation threshold pressure (the amount of lung pressure needed to initiate vocal fold vibration), and allow for less effortful register transitions.⁶ They recommend performing a pitch glide through a straw (from as low as possible to as high as possible) as a way to allow for full range of motion with minimum collision stress.7 Speechlanguage pathologist and voice researcher Aaron Johnson advocates a similar exercise in The Vocal Athlete: Application and Technique for the Hybrid Singer as a way to help singers achieve smooth register transitions.⁸ However, when performing straw phonation, it is common for salivabased condensation to accumulate inside the straw. When vocalizing, these droplets could be introduced into the air or even drip onto a surface that may be touched by another person. This may not be of concern for singers when they are practicing in a room by themselves. However, for singing teachers who will be in a shared space with their students and clients, it may be worth exploring SOVTs that provide a similar degree of effectiveness with a lower spit factor.

The Cost/Benefit of Effectiveness Versus Risk

In a 2015 paper in *Logopedics Phoniatrics Vocology* by Lynn Maxfield, Ingo Titze, Eric Hunter, and Mara Kapsner-Smith titled "Intraoral pressures produced by thirteen semioccluded vocal tract gestures," the authors' research was guided by the following question: "[I]f the effectiveness of a SOVT gesture to reduce adductory stresses on the vocal folds is related to the supraglottal pressures the gesture produces, can oral occlusions be ranked according to their corresponding intraoral pressure?"⁹

In their work with twenty subjects (ten male, ten female), the high spit factor SOVTs produced favorable results. Raspberry, small straw, and lip trill ranked second, third, and fourth, respectively, producing greater mean intraoral pressure across all subjects. Other potentially high spit ⁴ National Center for Voice and Speech, "Vocal Straw Exercise"; *www.youtube.comwatch?v= 0xYDvwvmBIM&t=1s* (accessed March 26, 2020).

⁵ Julia Belluz, "How blowing into a straw can save your voice," Vox, June 20, 2015, *www.vox.com*/2015/ 6/20/8816065/how-not-to-lose-your-voice. Scott Stump, "Sheinelle Jones announces she's having surgery to remove a lesion on her vocal cord," *Today*, February 20, 2020, *www.today*. *com*/ *health/sheinelle-jones-reveals-she'shaving-surgery-her-vocal-cord-t174315*.

⁶Ingo R. Titze and Katherine Verdolini Abbott, *Vocology: The Science and Practice of Voice Habilitation* (Salt Lake City, UT: National Center for Voice and Speech, 2012): 302-303.

⁷ Ibid., 214.

⁸ Aaron M. Johnson, "Register Transition Exploration," in *The Vocal Athlete: Application and Technique for the Hybrid Singer*, ed. Marci Rosenberg and Wendy D. Leborgne (San Diego, CA: Plural Publishing, Inc., 2020), 118-119.

⁹ Lynn Maxfield, Ingo Titze, Eric Hunter, and Mara Kapsner-Smith, "Intraoral pressures produced by thirteen semi-occluded vocal tract gestures," *Logopedics Phoniatrics Vocology* 40, no. 2 (2015): 87. factor SOVTs followed with /v/ ranked fifth, bilabial fricative $/\beta$:/ sixth, tongue trill seventh, /3/ eighth, /z/ ninth, and large straw tenth. The SOVTs with the lowest overall intraoral pressure were the nasal continuants /n/ and /m/, ranking twelfth and thirteenth, respectively. Due to their closed mouth position, these exercises may have a low spit factor, but their low intraoral pressure may also indicate they are less effective at bringing about the vocal benefits of other SOVTs. As the authors state, "[...] the nasal continuants /m/ and /n/ produce very low intraoral pressures, possibly calling into question their inclusion in the SOVT category of vocal exercises."¹⁰

Another SOVT to consider is the manually occluded vocal tract (MOVT) exercise. Originally dubbed the "standing wave" by Burton Coffin,¹¹ the MOVT is performed by vocalizing while placing a hand across the mouth, as described and demonstrated by Nix on YouTube.¹² Although it is not one of the exercises measured by Maxfield *et al.*, Marci Rosenberg places it fifth out of eleven in a "Hierarchy of SOVTs," based in part on a 2006 paper by Titze,¹³ that ranges from higher resistance/greatest occlusive effect (smaller diameter straws) to lower resistance/smallest occlusive effect (speech).¹⁴ As with the nasal continuants, the MOVT seems unlikely to introduce saliva droplets into the air. However, singers vocalizing with the MOVT may accumulate saliva on their hands when they are placed over their open mouths. If those singers then touch objects or surfaces that may be touched by other people (pencils, music stands, doorknobs, etc.), they create risks similar to those seen with high spit factor SOVTs. The SOVT that had the highest degree of overall intraoral pressure in the Maxfield et al. (2014) study, however, was the straw in water.¹⁵ (This exercise was not included in the listings by Titze or Rosenberg.) When used appropriately, this exercise can produce a high degree of intraoral pressure, making it likely that singers may reap the full benefits SOVT exercises provide. It may also result in a relatively low spit factor, keeping it safe for studio use.

How to Use the Straw in Water

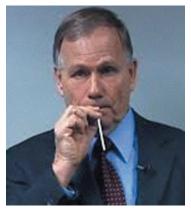
For those less familiar with this SOVT, singers can vocalize into a straw much like they would in standard straw phonation. As in the aforementioned Titze video, singers should be mindful that their sound is passing through the straw and not leaking into the nasal cavity due to a lowered velum. They also should ensure that they are employing an embouchure that creates a complete seal of the lips around the straw, disallowing the escape of air. The opposite end of the straw is then submerged in a glass of water. When vocalizing into the straw, singers will be able to see the water bubbling in the glass, providing a visual cue as to how much airflow is being used—more airflow will result in bigger bubbles. Although the splashing of the water could also potentially ¹⁰ Ibid., 91.

¹¹ John Nix, "Closing Your Mouth to 'Open' Your Sound," *Journal of Singing* 73, no. 1 (September/October 2016): 39.

¹² John Nix, "MOVT part 1"; www.youtube.comwatch?v= SGOBBJ3yjnw&t=29s (accessed March 26, 2020).

¹³ Ingo Titze, "Voice Training and Therapy With a Semi-Occluded Vocal Tract: Rationale and Scientific Underpinnings," *Journal of Speech, Language, and Hearing Research* 49 (April 2006): 448–459.

¹⁴ Ingo Titze, "Hierarchy of SOVTs" as cited in Marci Rosenberg, "Cup Phonation: A Semi-occluded Vocal Tract Exercise," in *The Vocal Athlete: Application and Technique for the Hybrid Singer*, ed. Marci Rosenberg and Wendy D. Leborgne (San Diego, CA: Plural Publishing, Inc., 2020), 100.
¹⁵ Maxfield, *et al.*, 89.



Ingo Titze using the straw technique

contribute to a high spit factor, this can be alleviated by using a cup that has a lid (*as pictured below*). The splashing can be further contained by placing tape around the straw where it meets the lid of the cup.



Using a bendable straw allows singers to keep their headand-neck positions aligned as the straw is raised to the mouth rather than the head being lowered to the straw. Using a bendable straw also avoids the splashing and spilling that may occur if the cup is tipped in an attempt to keep the straw more perpendicular to the mouth. Straw in water exercises can follow the same protocols advocated in Titze's video, including glides, accents, and singing songs through the straw while it is submerged. However, nearly any vocalise used in a voice studio can be made to work with the straw in water as well (arpeggios, scales, etc.). In addition, singers may experiment with different intraoral pressures by submerging the straw at deeper and shallower levels in the water (deeper submersion will result in more pressure and shallower submersion in less pressure). As with standard straw phonation, singers can also use straws of differing lengths and diameters for even more varied levels of pressure. Additional considerations for performing straw in water, and further details of the benefits of SOVT exercises, can be found in the document "Lax Vox Voice Therapy Technique," which outlines the technique developed by Marketta Sihvo and Ilter Denizoglu.¹⁶

As with most vocal exercises, there is no "one size fits all" when it comes to SOVT exercises. There is no guarantee that straw in water will prove successful for every singer. However, if teachers guide students as they experiment with differentsized straws and a variety of submersion levels, they are likely to find combinations that can work for most individuals, offering them the benefits of SOVTs with a relatively low spit ¹⁶ Marketta Sihvo and Ilter Denizoglu, "Lax Vox Voice Therapy Technique"; *www/laxvox.com/documents/ LAXVOX%20handouts.pdf* (accessed March 26, 2020).



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Manternach received the 2016 Voice Pedagogy Award from the National Association of Teachers of Singing (NATS) Foundation. He has given presentations for the Pan American Vocology Association, Voice Foundation, Voice and Speech Trainers factor. And it goes without saying that if the risk of spreading viruses is to be limited, straws, cups, and water, once used, should not be shared.

Conclusion

Due to the COVID-19 pandemic, many singing voice teachers have shifted their work to online video conference formats. When we eventually emerge from our quarantines and physical distancing and resume our in-person work, it is likely that we will do so with a heightened awareness of how viruses can be spread and of how serious the repercussions of widespread viruses can be. As such, we would all do well to begin implementing practices that minimize risk, even when students are outwardly displaying good health. As research involving SOVT exercises continues, further identifying evidence-based best practices, it is also worth considering how to modify the exercises we are currently using in ways that further minimize the risk of spreading communicable diseases. Association, Summer Vocology Institute, University of Utah Voice Disorders Center, TEDxSaltLakeCity, and NATS.

He is an associate editor of the Journal of Singing and a regular contributor to Classical Singer. Additionally, he has written articles that have been published in the Journal of Voice, Voice and Speech Review, VOICE-Prints, College Music Symposium, NATS Inter Nos, and the Music Theater Educators' Alliance Journal. He also has contributed a chapter to The Voice Teacher's Cookbook (Meredith Music, 2018).

Manternach has made solo appearances with the Milwaukee Symphony Orchestra, Cleveland Chamber Symphony, and Sinfonia Salt Lake, among others, and his stage credits range from Belmonte in Die Entführung aus dem Serail to Eisenstein in Die Fledermaus to Miles Gloriosus in A Funny Thing Happened on the Way to the Forum.

His degrees in voice performance include a B.A. from St. John's University of Minnesota, an M.M. from the University of Wisconsin-Milwaukee, and a D.M. from the Indiana University Jacobs School of Music. He is also an NCVS-trained Vocologist.