WHAT MUST I DO WITH MY TONGUE IN SINGING? NONLINEAR SOURCE–FILTER THEORY IN THE SINGING VOICE: STUDY OF THE BIOMECHANICAL ADJUSTMENTS OF THE THYROARYTENOID MUSCLES AS A CONSEQUENCE OF THE LINGUAL MOVEMENT.

Pilar Lirio (E)
pilarlirio@yahoo.com

The singing voice demands a high level of skill. The laryngeal system has to provide pitch to the singer, the low and high notes and the articulatory system must achieve phonetic integibillity. However, both systems don't work in an independent way. The Nonlinear source-filter theory establishes that the movement of an articulator has influence on the laryngeal structure. The present work analyzes the biomechanical behavior of each of the vocal fold sections related to fundamental frequency, mass and tension for a male and a female voice. Subjects have been asked to hold the tongue in two articulatory ways: a relaxed posture, (gesture 1) and a tense posture, (gesture 2). The gestures have different effects on the body and the cover of the vocal folds that are verifiable through a series of biometric measurements. Statistical analysis shows that the tongue tension produces an increase of fundamental frequency and a decrease in the vocal fold cover tension. This implies that the singer can sing high notes more easily and therefore has a decreased risk of suffering voice disorders.

Using the International Phonetic Alphabet as a tool to teach singing

Learning to sing requires singers to alter pronunciation from the speech habits acquired during childhood to the special articulatory patterns required to sing properly. The International Phonetic Alphabet is a standardized system that proposes extensive articulator positions and helps students explore different patterns of pronunciation during singing. These positions simultaneously change the biomechanics of the vocal folds inducing variations in jitter, shimmer, fundamental frequency, harmonics or mucosal wave among other measures. In this chapter, I first discuss the biomechanical changes associated to each articulatory position which serve to enhance the students' sounds and then propose some exercises using the IPA chart.
(coming in 2019)

Pilar Lirio is a teacher, singer and researcher. President of Spanish Association of Teachers of Singing (AEPC), Founder of Hispasong® and VocalSfera, Founder and director of Spanish Institute of Voice (IEV), M.A. Law (Complutense University), M.A. Singing performance (Escuela Superior de Canto in Madrid), M.A. Vocal Science and Phonetics (Spanish National Research Council and International University "Menéndez Pelayo"). Expert in diction: English, Italian, German and French, Russian, Czech, Polish, Latin, Swedish, Spanish (modern and medieval Castilian and Andalusian dialect) and Spanish official languages (Spanish, Catalan, Basque, Galician). She is now doing her PhD on singing technique as a tool for the voice rehabilitation in Parkinson disease patients in the Center of Biomedical Technology and Uned (Spanish Distance University) and is developing an Interregional project about singing and neurorehabilitation: CENIE_TECA-PARK.

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