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**A Statistical Phonologic Analysis of a Vocal Arts Training Method;
The Book “How to Train Singers: With Illustrated “natural” Techniques & Audio Exercises”
By: [Larra Browning Henderson](#)
[Parker Publishing Company, 2001 - [Music](#) - 256 pages]**

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ABSTRACT

“How to Train Singers: With Illustrated “natural” Techniques & Audio Exercises” By: [Larra Browning Henderson](#) contains voice training drills. These drills use an array of syllables to develop the voice qualities. And the syllables are off course compound of vowels and consonants and in very few cases only vowels. This article aims to provide a statistical review of the vowels and consonants used in this book. It also includes the phonological features of those segments.

Keywords: *Phonological Description, Structuralist Phonology, Segments, Teaching of Vocal Arts, Vowels Repetition, Consonant Repetition.*

INTRODUCTION

Despite the fact that the author states in this book that she owes this technique to Maud Douglas Tweedy and Dr. Frank E. Miller, what is covered in it seems to be a tested technique which ran in the tradition of the Western teaching of vocal arts. A technique that “can help any singer; singing in any style.”

As it is indicated in the preface of the book some vocal coaches merely use the vowels to create vocal exercises. That seems to be true about the coaches all around the world, teaching in a variety of languages situated in the context of various cultures. They usually use one vowel in each drill. Yet, this book doesn't follow this cliché and the syllables that it uses are combinations of two vowels or in most cases a blend of vowels and consonants.

It is a very helpful book that provides the singers with useful and handy exercises. Therefore, providing a detailed phonological analysis of that seems necessary.

This paper aims to provide a phonological description of the exercises provided in this book and ignores the musical pitch. So, the set of these exercises is merely regarded as a ‘phonological vocal system’.

Documentation and Description:

The book contains a chapter on the anatomy and physiology of the singing voice. Some chapters provide the reader with tips about good posture, body alignment and body preparation like the *hook* and the facial mimics suitable for singers like the *mask*. They are not dealt with in this

article. Also, the pitch and amplitude and duration of the phrases used in these exercises are neglected and only the focus is on the “phonology of the sounds” used. It means the notation is dismissed, whether the notes be isomorphic with the phonemes or not. Nonetheless, this article makes a phonological description of a musical instrument; the human voice.

In some exercises the layer of feet (F) consists of the repetition of the same syllable (σ) several times (like *Pruh pruh pruh pruh pruh*) and sometimes some variant syllables join together to make the phonological word (ω) (like *Kah kay kee koh koo*).

The segment inventory of this vocal system

This book has introduced its own symbols for the vowels. Therefore, its example is followed here. Here are the vowels with an example for each as indicated in the book:

Vowel Example

a	at
ah	father
aw	awful
ay	hate
ee	easy
eh	every
eye	eye
ih	it
oh	know
oo	moon
uh	up

Exploration and Analysis:

The numbers of repetitions for each vowel and consonant are reported in an approximate way here. The number is not considered as ‘exact’. Since some of the exercises are to be repeated in different pitches, etc. Yet, we can somewhat rely on their ratio compared to each other.

Vowel inventory and its approximate repetition include:

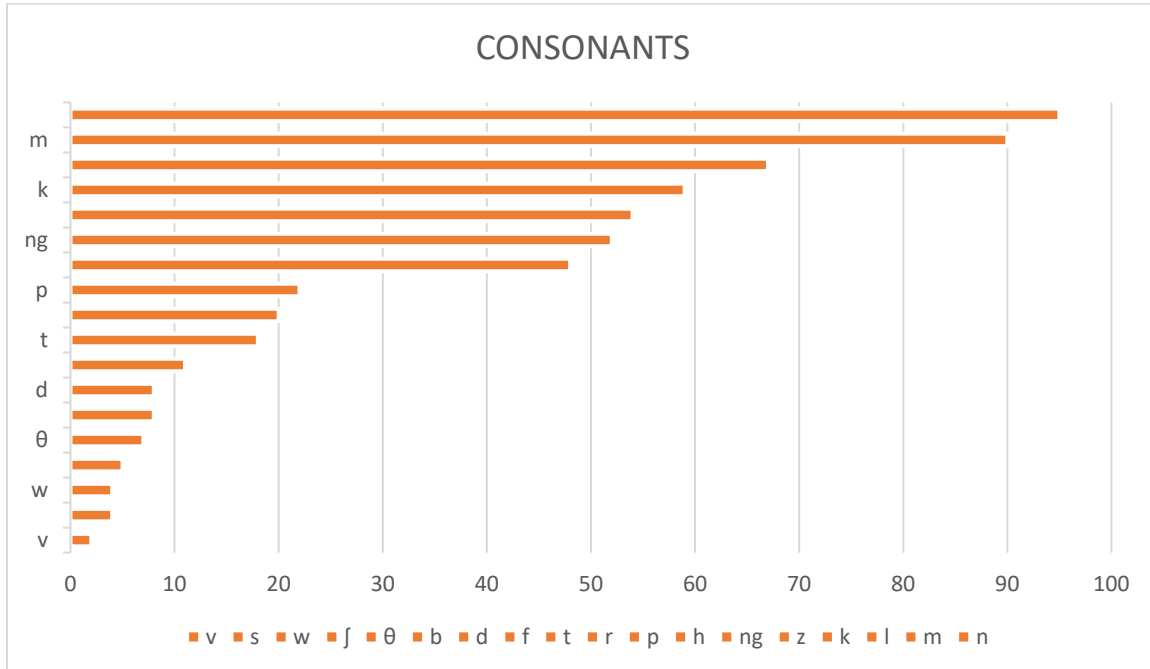
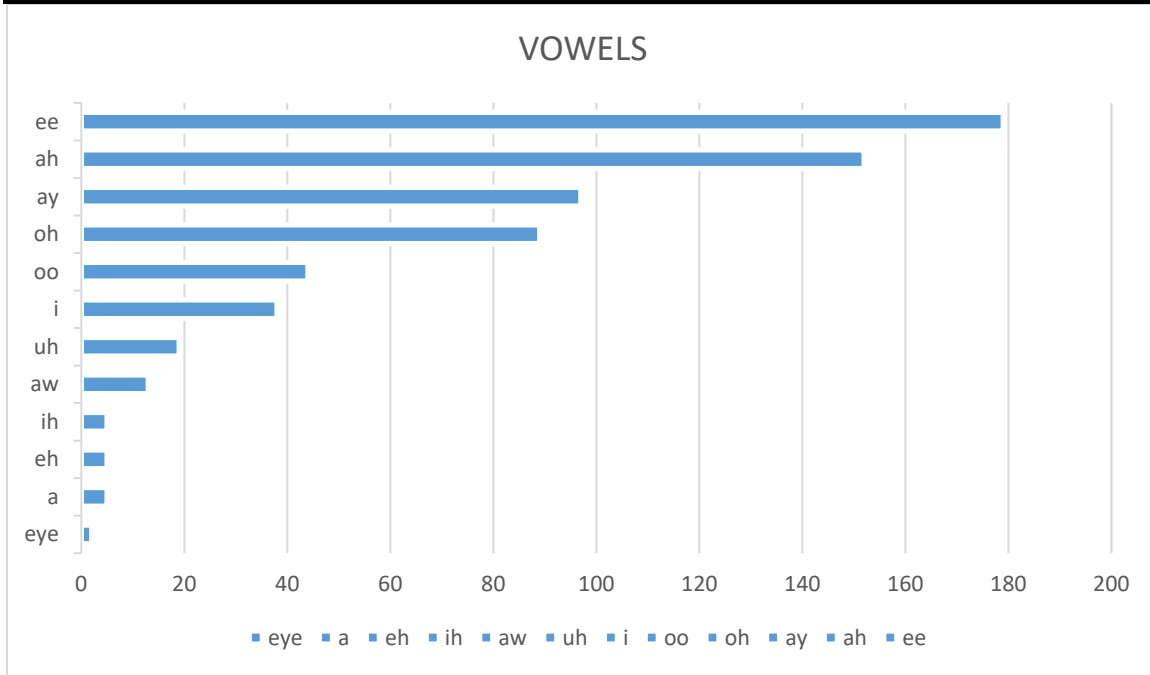
VOWELS	Approximate Repetition
a	5
ah	152
aw	13
ay	97
ee	179
eh	5
eye	2
ih	5
oh	89
oo	44
uh	19
i	38

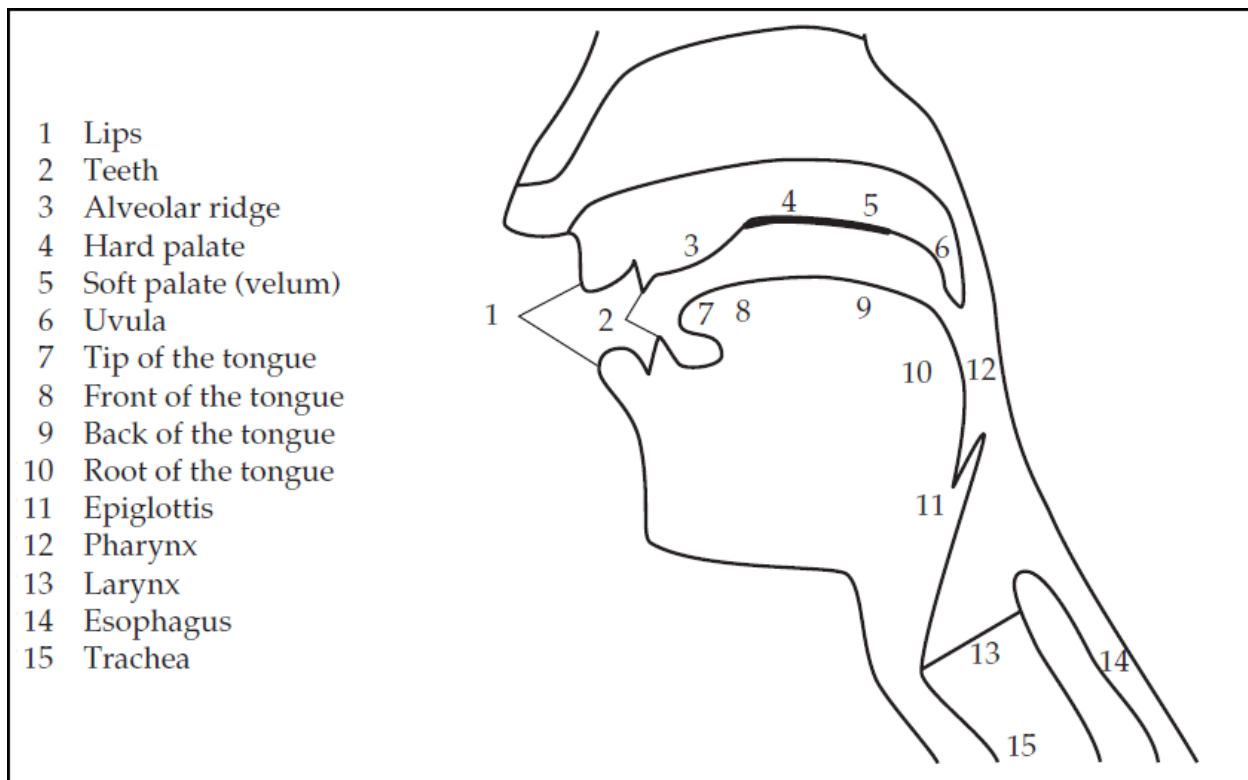
Consonant	Phonological Features	Approximate repetition
/h/	voiceless glottal fricative	48
/k/	voiceless velar plosive	59
/f/	Voiceless labiodental fricative	11
/l/	voiced alveolar lateral approximant	67
/n/	voiced alveolar nasal	95
/t/	Voiceless alveolar plosive	18
/m/	voiced bilabial nasal	90
/p/	voiceless bilabial plosive	22
/r/	voiced uvular trill (fricative)	20
/b/	voiced bilabial plosive	8
/w/ (semi-vowel)	voiced labial-velar approximant	4
/z/	voiced alveolar fricatives	54
/θ/	Voiceless dental fricative	7
/v/	voiced labiodental fricative	2
/d/	Voiced alveolar plosive	8
/ʃ/	Voiceless postalveolar fricative	5
/ng/	voiced velar nasal, also known as agma	52
/s/	voiceless alveolar fricatives	4



The total repetition of the vowels is 648 times for 12 vowels.

The consonant inventory includes 17 consonants. The total repetition of consonants is 574 times for 16 different consonants and a semi-vowel. The vowels /a/, /eh/, /ih/ have the same repetition of five times. The least repetition of vowels is for /eye/ with two times and the most belongs to /ee/ with 179 times. The consonants /s/ and /w/ have the same repetition of four times. /d/ and /b/ are both repeated eight times. The most repeated consonant is /n/ with ninety-five times and the one with the least repetition is /v/ with two times.





1. /m/, /i/, /ng/, etc.
 5. /k/, /ee/, /ay/, /ah/, /oh/, /oo/, /h/, /u/, /m/, etc.
 7,8,9,10 [Tongue]. /f/, /l/, /n/, /ah/, /ee/, /k/, /i/, /ng/, /ay/, /θ/, /t/, etc.

These are the highlighted consonants and vowels used in the exercises to enhance the performance of speech organs. Among more than ninety exercises of the book, one can find exercises to enhance the strength of the stomach muscles, like *haw k haw k haw k haw k* and *hah hay hee hoh hoo*.

Some drills help with coloratura and resonance like *Kee kay kee kay kee* and some other mainly with resonance like *Preh preh preh preh preh*, *Ming oh Ming oh Ming oh Ming oh Ming oh Ming oh Ming oh*, *Hung oh Hung oh Hung oh Hung oh Hung oh Hung oh Hung oh*. The resonance exercises deal with the nose, mouth and pharynx. Some exercises expand the vocal range upwards and downwards like *V vee ah ee ah ee* and *Ning ee ning ee ning*.

For forte the exercise is *Zay luh zah luh zay luh zah luh zay luh zah luh zay luh zah* and *Nee ah Nee ah* and for staccato is *fffff* and *Ng Ng Ng Ng Ng Ng Ng Ng*.

/p/ and /t/ in all cases and /k/ in almost all cases are the first consonant in the syllable. Therefore, they become [+aspirated].

Where the absentees find their presence in the present consonants/vowels

The author applies a very creative system of vowels. She even considers diphthongs like /aw/ and /ay/ as vowels. Her model was followed in this article and also it was refused to comment on the vowels as of what English vowels might be absent here.



The absent consonants according to the set of consonants in English language are /ð/, /x/, /tʃ/, /dʒ/.

/g/ is somewhat found in the /ŋ/ and /j/ in diphthongs like /eye/.

Arrangement:

The phonological words are mostly syllables in this book. They are considered as minimal pairs. Some of them look like tongue twisters.

The syllables are both syllabic (like ning) and non-syllabic (like nee, pruh). Yet, the non-syllabic wins the majority. Not all exercises are initial syllable. Non-initials are also found.

As we know, when /p/, /t/ and /k/ sit as the first consonant of the syllable, they get aspirated. This is the case with all the /p/s and /t/s and most of the /k/s in this book.

Most syllables follow the CV pattern. Some are CVC.

Minimal Pairs

Despite the fact there is no meaning involved here, the followings are assumed as minimal pairs: Minimal pairs made with /ah/ are in the following syllables: kah-lah-zah-θah-nah-mah-sah-fah-dah.

Minimal pairs made with /aw/ are in the following syllables: haw-waw.

Those with /ay/ are as follows: nay-lay-may-hay-kay-bay

Those with /ee/ include: hee-kee-nee-θee-vee-tee-fee.

Those with /oh/ are: koh-zoh-moh-noh-wo h-doh-loh.hoh-poh

Those with /oo/ are: koo-boo-hoo-too.

Those with /uh/: ruh-luh.

Ning and ming plus koo and boo are some other minimal pairs.

What is this thing about the lips?

As stated in the book, /m/ is a good consonant in exercises for the accordance of the lips. /p/ can be used instead of /m/ in those exercises. Instead of /s/ in one single exercise that this consonant is used, the singer can use /z/ or /n/.

Also, instead of /haw/ and /oh/, /w.o.h/ and /oo/ can be used after some period of rehearsing. That is the same with /maw/, /w.o.h/, /noh/, /naw/, /vaw/ after some time of working with /noh/ and /maw/.

Literature Review

Singing methods and/or singing training methods are mostly regarded and reviewed through a musical perspective. Many articles are written in that category.

published an article online titled “Phonetics of Singing in Western Classical Style”. It mainly deals with the formants and factors of expressivity in the singing voice.

Conclusion

Despite the fact that it's widely believed that linguistics doesn't judge any language, the author of this article believes the opposite. I can't help appreciating the complicatedness of Arabic and/or German Grammar (syntax).

So, by exploring these exercises that are supposed to be good and healthy for the vocal system, we might be able to develop some criteria for how healthy the phonological system of any language can be depending on the frequency and pattern of these consonants, vowels and phonemes in that given language.

This book that seems to be a full vocal “work-out” that considers human voice as a musical instrument, can be universal.

And the bottom line is:

Lah bay dah may nee poh too lah bay Bay dah may nee poh too lah bay dah!

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References

1. [Larra Browning Henderson](#). How to Train Singers: With Illustrated “natural” Techniques & Audio Exercises. Parker Publishing Company, 200.
2. Johan Sundberg. Phonetics of Singing in Western Classical Style.

