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To cite this article: Floyd S. Muckey M.D.C.M. (1918) The work of the voice section of the third annual convention, *Quarterly Journal of Speech*, 4:1, 103-111, DOI: [10.1080/00335631809360651](https://doi.org/10.1080/00335631809360651)

To link to this article: <http://dx.doi.org/10.1080/00335631809360651>

Published online: 05 Jun 2009.

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THE WORK OF THE VOICE SECTION OF THE THIRD ANNUAL CONVENTION

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AT THE close of the convention one of the leading members of the association asked me the following question. "Why do voice teachers and those who write and speak about the voice disagree so absolutely as to the problems involved in voice production!" The answer was that if those who teach, write, and speak about the voice would confine their statements to those which could be based directly upon the fundamental facts of sound production, there could be no disagreement. Hence the reason for disagreement must be found in the fact that in most of the teaching of voice, and in most of the statements made in regard to voice production there is an utter disregard of these fundamental facts. The greatest possible emphasis should be placed upon this statement, and it is proposed to show in this article that any differences of opinion which were brought out in the work of the Section was due entirely to this cause.

The program of the voice section consisted of the following items.

1. Common Voice Defects, the Cause and Cure of Each—Dr. Floyd S. Muckey, New York City.

Open Discussion: Leader, Theresa A. Dacey, Director Speech Improvement Classes, Boston.

2. A new Discovery in Voice Training—Eugene Feuchtinger, Director Perfect Voice Institute, Chicago.

The contention of the first speaker was briefly as follows: A voice defect is a lack of some essential characteristic of the voice, and before we can understand what is meant by common voice defects we must know what the essential characteristics of the effective voice are. It was maintained that three things were essential to efficiency in voice production. 1st, The least possible expenditure of energy in this production and hence the conservation of the voice mechanism. 2nd, Distinctness of enunciation (vowel sounds) and articulation (consonants) 3rd, Agreeableness of Sensation. Numbers 2 and 3, conserve the energy of

the listener. We thus see that efficiency and conservation of energy travel hand in hand. Every individual possesses a certain store of energy and he can use no more than he has. If the speaker expends too much energy in producing his voice, or the instrument which carries his message, the less he has to expend upon the content of that message, and hence he is in just so far inefficient. The listener is in the same predicament. If he is compelled to expend the greater portion of his energy in getting the words of the speaker, he will have little energy left to expend upon the ideas presented by him. It is this particular phase of the subject, the one which applies to every speaker and every listener, and therefore which may be described by the term "common," which is of especial interest to the Association of Teachers of Speech. It was this phase of the subject which was discussed in the first paper entitled "Common Voice Defects: The Cause and Cure." It was pointed out that as the voice is sound and sound is airwaves, that voice production must be air-waves production. That in air wave (voice) production three things are essential: 1st, a vibrator to start the air waves. 2nd, a pitch mechanism to determine the rate at which the air-waves are started by the vibrator. 3rd, a resonance mechanism to amplify the air-waves for volume and quality. It was shown that efficient or natural voice production depends upon three things: 1st, a free motion of the vibrator that the proper series of air-waves may be started by it. 2nd, a free action of pitch mechanism that pitch changes may be accomplished with the least possible expenditure of energy, and 3rd, full use of the resonance space (pharynx, mouth and nose) which, although the most important element in both volume and quality, entails absolutely no expenditure of energy and hence represents the acme of efficiency. It was stated that only when these things obtained could the effective voice be produced and that voice defects were due to interferences with one or all of these most desirable conditions. All these are fundamental facts which may be substantiated by reference to any works on acoustics (science of sound), and which must be admitted by everybody who thinks and reasons. Acousticians, whose business it is to know every phase of air wave production, including the action of vibrators, pitch mechanisms, and resonators, tell us that all sound (including speech sounds) are divided into two great classes, viz., Tone and Noise.

Tone includes all sounds in which the air-waves proceed in regular sequence, while noise includes all of those sounds which proceed in irregular sequence. Regularity and irregularity of air-wave motion, therefore, afford a definite basis for an accurate classification of speech sounds. Under tone, or regularity of wave motion, fall all sounds represented by the letters, *a, e, i, o, u, m, n, l, r*, etc. Under noise, or irregular air-wave motion we have sounds represented by *S, H, F, K, G*, whispered vowels, etc. There is a vast difference in these two classes of sound, not only in their constitution, but in their mode of production and in the effect which they produce upon the listener. Regularity of vibration and hence the origination of regular air-wave motion (tone) requires a vibrator having great elasticity. Yellow elastic tissue is the only structure of the body which possesses this. The true vocal chords are made up almost entirely of yellow elastic tissue. The true vocal chords, therefore, originate all of the air-waves in tone. In speech sounds included in the class termed noise, the vibrator consists of a small air column adjacent to the constriction produced in the vocal passages; 1st, by the false vocal chords which are located in the larynx just above the true cords; 2nd, by the back of tongue and soft palate; 3rd, by the tip of tongue; 4th, by the lips. The 1st is represented by the sound of *h*, the second by *K* and *G*; the 3rd by *t* and *d*; the 4th by *p, f*, etc. Energy in voice production is represented mainly by breath pressure. The amount of breath pressure essential to the operation of these two kinds of vibrators is very different. A great amount of breath pressure is used in the production of noises, while comparatively little is needed in the correct production of tone. The interferences with correct tone production are first, the contraction of the muscles of the false vocal chords which prevents the free swing of the true cords, and hence the proper series of air-waves is not started by them, 2nd, The contraction of the muscles of the soft palate has the effect of shutting the air-waves out of the upper pharynx and nasal cavities. We have shown by actual analysis which cannot be controverted that this takes away at least one half the volume and results in a great deterioration of the tone quality. 3rd, the interference caused by the contraction of the muscles of the back of the tongue (hyoglossi) and those running from the chin to the hyoid bone. The pulling down of the tongue by the contraction of the hyoglossi muscles interferes with the egress of the air-waves from the

larynx, prevents the clear differentiation of the vowel sounds by stiffening the tongue, and interferes with the free action of the pitch mechanism. The contraction of the chin muscles interferes also with the action of the pitch mechanism. These various forms of interference entail not only a great loss in volume, quality and pitch range in tone production, but also require a greater expenditure of breath pressure or energy, and also lessen very greatly the agreeableness and distinctness of the sensations produced in the listener. We also find that the action of the resonators is much more effective in tone than in noise, and also that they are more effective in amplifying air-waves produced without false cord interference than where there is interference. It was, therefore, shown that effectiveness as regards expenditure of energy, distinctness and agreeableness depended largely upon interference. It was demonstrated that the action of the mechanism which produces noise or consonants was an interference with the action which produces tone; hence the consonant action must not be carried over into the vowel action. Moreover, consonants must be made as short as is compatible with distinctness, as they represent inefficiency, and disagreeableness. Demonstrations were given showing how to remove interference and illustrating what was meant by clear differentiation of vowel sounds. The following summary will give a clear idea of the ground covered and the conclusions reached.

SCIENCE OF PHONETICS

(Speech Sounds)

1. DEFINITIONS. AIR WAVES AND SENSATIONS PRODUCED BY THEM.
2. ANALYSIS (Separation into partial tones)
3. CLASSIFICATION OF FACTS (Constituent elements)

1. Tone (Regular air-waves)		}	{	Agreeable Sensation Small expenditure of energy = effectiveness. Non-interference = effectiveness.
1.	Fundamental vowel sound = the hum			
2.	True Vowels — A, E, I, O, U, etc.			
3.	Modified Vowels — M, N, L, etc.			
4.	Semi-vowels (tone and noise) Tone predominant — V, Z, etc.			
2. Noise — Consonants (Irregular Air-Waves)		}	{	Disagreeable Sensation. Great expenditure of energy = ineffectiveness. Interference with tone = Ineffective.
1.	Continuents = S, H, etc.			
2.	Explosives = T, K, etc.			
3.	Semi-consonant = whispered vowels.			

4. CAUSES (Action of Mechanism)

1. Vibrators (Originate air-waves)

1. True vocal cords (tone): 1. Length 2. Weight
3. Tension

Give definite pitch changes and hence inflection and wide range

2. Air column (Noise)	1. Adjacent to	} No definite
pitch changes,
no inflection,
small range
false vocal cords	2. " "	
back of tongue	3. " "	
tip of tongue	4. " "	
lips		

2. Resonators (Amplify air-waves)

1. Pharynx and Nose = the hum: Very effective in tone
2. Pharynx, Mouth and Nose = all sounds except hum—in-effective in noise
3. Pitch Mechanism (Rate at which air-waves are started)
1. Cartilages and muscles of larynx (tone)
2. Size and shape of resonators (noise)

5. RELATIONSHIPS (Facts in Common)

1. Pitch (length of wave)

1. Tone (Regularity)
1. Controlled by length, weight, and tension of vocal cords = slight expenditure of energy = effectiveness.
2. Definite pitch changes, wide range, variety of inflection = agreeableness.
2. Noise (Irregularity)
1. Controlled by size and shape of resonators = great expenditure of energy = ineffectiveness.
2. No definite pitch changes, small range, little variation of inflection = disagreeableness.

2. Volume ("Height" of wave)

1. Tone (Regularity)
1. Extent of swing of vocal cords = wide range, slight expenditure of energy = effectiveness.
2. Resonance = no expenditure of energy = greatest possible effectiveness.
2. Noise (Irregularity)
1. Controlled by air blast = small range, great expenditure of energy = ineffectiveness.
2. Resonance = ineffectiveness.

3. Quality (Form of wave motion)

1. Tone (Regularity)
1. Vibration of cords as a whole and in segments = great variation = agreeableness.

2. Resonance on account of regularity of wave length = effectiveness.
2. Noise (Irregularity)¹
 1. Vibration of air column = little variation = disagreeableness.
 2. Resonance on account of irregularity of wave motion = ineffectiveness.
6. NATURAL LAW (Resume)
 1. Effectiveness as to expenditure of energy and distinctness and agreeableness of sensation.

Note—(This chart is the result of the deliberations of a group, consisting of Dr. Chas. P. G. Scott, the well-known philologist and Etymologist; Prof. Thos. F. Cummings, professor of phonetics in the Bible Training School of New York City; Mrs. Mary K. Scripture, Chief of the Vanderbilt clinic for speech defectives, New York City; Mr. Geo. Bowden for the past five years at the head of the vocal department of the University of California; and Dr. Floyd S. Muckey, New York City, Author of the Natural Method of Voice Production.)

The discussion was opened by Miss Dacey who made two brief references to the preceding paper and then presented a discussion of stuttering and stammering, which consumed the greater part of an hour and left no time for discussion of the subject under consideration. Miss Dacey's first criticism was that while all that had been said was perfectly true, it was not new; that she and Dr. Scripture had carried out an investigation years before which covered all of these points. From all that can be gathered, Mrs. Scripture, if not "the main spoke in the wheel" in this investigation, at least was a very important one, and was perfectly familiar with all the work which had been done up to the time of Dr. Scripture's mysterious disappearance. She has since carried on the work herself. The writer has known Mrs. Scripture well for the past three years. She has heard this lecture and demonstration several times and has never even hinted that there was any trespassing upon Dr. Scripture's preserves. The writer has read practically everything which Dr. Scripture has published and there is no sign of definition, classification, analysis of tone, interference, or any of the fundamental propositions upon which this work rests, present in any of them. We have never claimed credit for the fundamental facts presented, as they are as old as the ages. What we do claim is that we were the first to apply these facts to the action of the mechanism and from this to work out a rational system of removal of interference and development of the voice mechanism.

The second criticism given by Miss Dacey was that the paper presented did not deal with the subject-matter indicated by the title as it appeared on the program. That the discussion should have been limited to that particular class of defective speech called stuttering and stammering. Miss Dacey then took up a discussion of the latter subject, which left no time for consideration of the first paper presented. Stuttering and stammering are merely an exaggeration of the common defects of speech and hence are placed in a class by themselves and called speech defects. Stuttering and stammering are not, therefore, common defects as the title of the first paper is stated, but a particular class of defects. Moreover the cause and cure of these exaggerations of common defects cannot be understood or effected until the cause and cure of the common defects are understood and effected. Hence any discussion of the cause and cure of exaggerated defects will be more or less profitless and ineffective until the cause and cure of common defects are known. The writer claims, therefore, that the matter contained in the first paper applied directly to the subject of common defects as indicated by the title, and also to the subject of stuttering and stammering which Miss Dacey discussed. The means employed to cure the common defects is the only effective and permanent method of curing stuttering and stammering. If the stammerer will cultivate a correct "hum," and then gradually add those motions of the tongue and lips essential to the formation of the so-called vowel and consonant sounds, without interfering with the "hum," his troubles will vanish, and he will be left with a good speaking voice. The Stammerer must acquire confidence in his vocal mechanism, which he has lost on account of excessive interference, particularly of the false cords, and there will be no further difficulty. This confidence can only be acquired through the use of the mechanism without interference. All of the exercises given by Miss Dacey in her own paper were directly opposed to the fundamental principles of tone production as outlined in the first paper, the truth of which Miss Dacey had already acknowledged. Why does Miss Dacey advocate exercises which are contradictions of the real truth of voice production? "Yawning, sobbing, laughing, throwing the voice, the whisper, voluntary action, forcible opening of the mouth" and the other exercises which Miss Dacey showed are all directly contrary to the right

action of the voice mechanism in speech and song. Miss Dacey used no nasal resonance in her own speaking voice and oftentimes false cord interference was very evident. Her articulation was not distinct owing to the stiffening of the tongue caused by lowering it in the back. These interferences are caused directly by the exercise advocated by her which the poor unfortunate stammerer is urged to imitate.

The next paper on the program was entitled, "A New Discovery in Voice Training" by Eugene Feuchtinger, Director of Perfect Voice Institute. A more appropriate title would have been "A Rediscovery of the John Howard Method of Voice Training." Every idea advanced in this paper and much more of the same character may be found in a book written by John Howard and published some thirty years ago. These ideas have been put into practice by John Howard and his disciples, of which Mr. Feuchtinger is evidently one, for the last forty years and have never produced a good speaking or singing voice. On the contrary they have been responsible for ruining thousands of otherwise beautiful voices and the writer's voice is among this number. Some thirty years ago the writer procured John Howard's book entitled "The Physiology of the Singing Voice" and proceeded, under the guidance of various instructors, to put it into practice for a period of about three years. At the end of this time there was complete loss of voice for a considerable time due to inflammatory conditions in the larynx. When the voice finally returned and the inflammatory conditions had somewhat subsided it was found that one of the arytenoid cartilages to which the cords are attached posteriorly was bound down by inflammatory adhesions and hence was immovable and has always remained so. The motion of these cartilages is essential to the approximation of the vocal cords in speech and song. The result of this binding down is that one cord can only be slightly drawn in toward the central point of the larynx while the other must be brought way past its normal position in order to meet it. The condition causes a constant irritation of the larynx and the vocal cords are in a constant state of congestion and pitch changes are greatly hampered. During a practice of 20 years as a throat specialist hundreds of such cases have come under the writer's observation due to precisely the same cause. This is the direct result of disregarding the fundamental facts of voice production.

Every statement made by John Howard, Mr. Feuchtinger and others who teach and preach this doctrine is directly contrary to the fundamental facts concerned as established by the anatomist, physiologist, and physicist. For example these gentlemen state that the vocal cords are made up of muscular tissue and that these muscles together with all the vocal muscles and the tissues surrounding the resonance cavities vibrate and help to produce tone. Every histologist of any standing stated that the vocal cords are made up of yellow elastic tissue and that they form a very substantial portion of the laryngeal structures. Every acoustician agrees that a vibrator to produce tone must have great elasticity and that the only substance in the human structure which has this characteristic is the yellow elastic tissue. They also state that muscular tissue has not this essential characteristic and therefore cannot act as a vibrator in tone production. Every statement made by Mr. Feuchtinger was as directly contrary to the real facts as the above. For example, he stated that a cavity could not reinforce a tone, that the false cords could not be approximated, that all the bodily tissues acted as sounding boards, etc., which are all contrary to the real facts. Prof. Hallock, in speaking of these fundamental facts, often stated, "If we do not know these things we do not know anything, and if we act in a way which is contrary to them we are sure to get into trouble." If John Howard and Mr. Feuchtinger are right, then all of our great anatomists, physiologists, and physicists are wrong, and all the real knowledge in the world is to be found in John Howard and his followers. The personal experience of the writer and his observation of hundreds of other similar cases prove the truth of Prof. Hallock's statements and the untruth of John Howard and Mr. Feuchtinger.