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of the Principles of Spelling Reform

Henry Sweet

Excerpt

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PART I.

THE ORGANS OF SPEECH.

1. The foundation of speech is breath expelled by the lungs and variously modified in the throat and mouth^a.

2. The breath passes from the lungs through the wind-pipe into the larynx ('Adam's apple'). Across the interior of the larynx are stretched two elastic ligaments, the 'vocal chords.' They are firmly inserted in the front of the larynx at one end, while at the other they are fixed to two movable cartilaginous bodies, the 'arytenoids,' so that the space between them, the 'glottis,' can be narrowed or closed at pleasure. The glottis is, as we see, twofold, consisting of the chord glottis, or glottis proper, and the cartilage glottis. The two glottises can be narrowed or closed independently. The chords can also be lengthened or shortened, tightened or relaxed in various degrees by means of the muscles they contain.

3. Above the 'true' glottis, and still forming part of the larynx, comes the 'upper' or 'false' glottis, by which the passage can be narrowed or partially closed. On the top of the larynx is fixed a sort of valve, the 'epiglottis,' which in swallowing and in the formation of certain

^a The exceptions to this general definition are very few. The most important are the 'clicks' (§ 176, below).

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sounds is pressed down so as to cover the opening of the larynx.

4. The cavity between the larynx and the mouth is called the 'pharynx.' It can be expanded and contracted in various ways.

5. The roof of the mouth consists of two parts, the soft and the hard palate. The lower pendulous extremity of the soft palate, the 'uvula,' can be pressed backwards or forwards. It is pressed back in closing the passage into the nose. When the pressure is relaxed, as in ordinary breathing without speech, the breath flows through the nose as well as the mouth.

6. The other extremity of the palate is bounded by the teeth, of which we must distinguish the 'edges' and the 'rim,' or place where they join the gums. The gums extend from the teeth-rim to the 'arch-rim,' behind which comes the 'arch,' whose front wall is formed by the 'teeth roots' (alveolars).

7. Of the tongue we distinguish the 'back,' the middle or 'front,' and the tip or 'point,' together with the 'blade,' which includes the upper surface of the tongue immediately behind the point. 'Lower blade' implies, of course, the lower, instead of the upper surface.

8. Besides the main positions indicated by these names, an indefinite number of intermediate ones are possible. The chief varieties are designated by the terms 'inner' and 'outer,' inner implying nearer the back of the mouth, outer nearer the teeth. Thus the 'outer front' of the tongue is a place nearer the point than simple front, and is therefore an approximation to the 'blade.'

Sounds are also modified by the degree of separation of the jaws, and by the movements of the lips and cheeks.

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PART II.

ANALYSIS.



THROAT SOUNDS.

BREATH, VOICE, AND WHISPER.

9. When the glottis is wide open, no sound is produced by the outgoing breath, except that caused by the friction of the air in the throat, mouth, &c. This passive state of the glottis is called 'breath' (hh)^a.

10. The most important 'active' states of the glottis are those which produce 'voice' and 'whisper.'

11. Voice (Λ)^b is produced by the action of the breath on the vocal chords in two ways. (1) If the glottis is entirely closed by the chords so that the air can only pass through in a series of puffs, we have that most sonorous form of voice known as the 'chest' voice or 'thick register' of the voice. (2) If the chords are only brought close enough together to enable their edges to vibrate, without any closure of the glottis, that thinner quality of voice known as the 'head' voice or 'thin register' is produced, which in its thinnest and shrillest form is called 'falsetto.'

^a The usual diacritic (') *before* the modified letter is also occasionally employed to denote breath. See §§ 12 and 16.

^b (Λ), = turned v, = 'voice.'

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12. If the chords are approximated without being allowed to vibrate, whisper (Δh), (Δ), is produced. There are two degrees of whisper, the 'weak' and the 'medium.' In the weak whisper the whole glottis is narrowed; in the medium, which is the ordinary form, the chord glottis is entirely closed, so that the breath passes only through the cartilage glottis.

13. The distinctions of breath, voice, and whisper are the most general of all, for every sound must be uttered with the glottis either open, narrowed, or closed, and the same sound may be pronounced either breathed, voiced, or whispered. Thus, if we press the lower lip against the upper teeth edges, we have the position of the 'lip-teeth' consonant. If we drive the air from the lungs through the passage thus formed, leaving the glottis open, we obtain the 'lip-teeth breath' consonant (f). If the chords are narrowed till voice is produced, we obtain the 'lip-teeth voice' consonant (v). If the student prolongs an (f), and then a (v), without any vowel, he will soon see that in the case of (f) the sound is formed entirely in the teeth, while with (v) the sound is distinctly compound, the hiss in the teeth being accompanied by a murmur in the throat. If he presses his two first fingers firmly on the glottis, he will distinctly feel a vibration in the case of (v), but not of (f). There is the same distinction between (s) and (z), (th) as in 'thin,' and (dh) as in 'then.'

14. It is of great importance to acquire a clear feeling of the distinction between breath and voice, and the student should accustom himself to sound all consonants both with and without voice at will. Such exercises as the following are very useful.

(1) Breathe strongly through the open glottis, and bring

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the lips and teeth together, concentrating the attention as much as possible on the actions by which the sound, (f), is produced rather than on the sound itself.

(2) Make a vocal murmur, as in the word 'err,' and then bring the lips and teeth together as before, which produces (v).

(3) Prolong (f) and remove the lips from the teeth: the result will be simple breath, (ɦh).

(4) Repeat the process with (v), and the result will be simple voice (ʌ).

(5) Pass without stopping from (f) to (s), (th), and (sh), and from (v) to (z), (dh), and (zh) as in 'rouge,' observing the unchanged state of the glottis while the lips and tongue shift continually.

(6) Pass without stopping from (f) to (v) and from (v) to (f), and so with the other consonants, observing the change in the glottis while the organic positions remain unchanged.

(7) Try to form from the familiar (l), (r), (n), (m) the unfamiliar breathed (lh), (rh), (nh), (mh).

15. The popular and the phonetic use of the term 'whisper' do not quite agree. Whisper in popular language simply means speech without voice. Phonetically speaking whisper implies not merely absence of voice, but a definite contraction of the glottis.

16. In ordinary whispering, as opposed to loud speech, what happens is this. Breathed elements, being already voiceless, remain unchanged. Voiced elements substitute whisper (in the phonetic sense) for voice. If we pronounce two such syllables as 'vee' and 'fee,' first in an ordinary loud voice and then in a whisper, we shall find that in 'vee' both consonant and vowel are changed,

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while in 'fee' only the vowel is changed, the consonant remaining breathed as in loud speech. It must, therefore, be understood in phonetic discussions that whenever we talk of a whispered sound we mean one that is pronounced with a definite contraction of the glottis. Whether we talk of a 'whispered (f)' or a 'whispered (v)' is indifferent—both names signify the 'lip-teeth whisper' consonant ('v')^a.

17. The acoustic distinction between breath and whisper is not very marked, but if we compare ('v) with (f), we perceive clearly that ('v) is, like (v), a composite sound, with a distinct friction in the larynx. Whispered sounds are also feebler than breath ones, the force of the outgoing air being diminished by the glottis contraction.

OTHER LARYNX SOUNDS.

18. *Glottal Catch* (x). When the glottis is suddenly opened or closed on a passage of breath or voice, a percussive effect is produced, analogous to that of (k) or any other 'stopped' consonant. The most familiar example of this 'glottal catch' is an ordinary cough. The student should carefully practise the glottal catch in combination with vowels till he is able to produce (xa) and (ax) as easily as (ka) and (ak), taking care not to let any breath escape after the (x) in (xa), as is the case in coughing. He should then learn to shut and open the glottis silently, and to know by the muscular sensation alone whether it is open or shut. It is easy to test the closure of the glottis by tapping on the throat above the larynx, which, when

^a The ('), = 'breath,' combined with (v), which implies voice, suggests something intermediate to breath and voice, which is whisper. See Ellis, E. E. P. p. 1129.

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the glottis is open, produces a dull sound, when shut, a clear and hollow one like the gurgling of water being poured into a bottle, and its pitch can be raised or lowered at pleasure by retracting or advancing the tongue.

19. (x) forms an essential element of some languages. It is common in Danish after vowels, and often distinguishes words which would otherwise be identical. Thus *hun* (hu'n) is 'she,' but *hund* (hux'n) is 'dog,' (кнѡ'm) is 'come,' (кнѡx'm) is 'came,' both written *kom*. According to Mr. Bell it is used in the Glasgow pronunciation of Scotch as a substitute for the voiceless stops, as in (waxehrr) = 'water,' (bexehrr) = 'butter.'

20. *Wheeze* (rh). If we strongly exaggerate an ordinary whisper, we produce that hoarse, wheezy sound known as the 'stage whisper.' In the formation of this sound there is not only the glottis narrowing of the ordinary medium whisper, but there is also contraction of the supraglottal passage or 'false glottis,' the opening being further narrowed by depression of the epiglottis. The sound is a common variety of (r), especially when it is voiced (ʀ). It is the regular sound in Danish, the laryngeal action being combined with retraction of the tongue and rounding, so that the sound is really (ʀ + ghw). (ʀ + gh) may also be heard in North Germany. If there is 'trilling' or vibration of the upper part of the glottis, the Arabic *Hha* (rhr) and *Ain* (ʀr) are formed.

NASAL SOUNDS.

21. In ordinary breathing the uvula hangs loosely down, and the air passes behind it through the nose as well as the mouth. In forming all the non-nasal sounds the uvula is pressed up so as to cover the passage into the

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nose. If the passage is open the sound becomes nasal. Thus (b) and (m) are formed in exactly the same way except that with (b) the nasal passage is closed, with (m) it is open. Similarly, if in pronouncing the vowel (a) the uvula is lowered, we obtain the corresponding nasal vowel (an).

22. The pure nasal vowels, which are common in many South German dialects, must be carefully distinguished from the French nasals, in which there is guttural compression as well as nasality, a combination which may be denoted by (ɣ), thus (aɣ) is the French 'en,' 'an,' (oɣ) = 'on,' (væɣ) = 'vin,' (œɣ) = 'un'^a.

23. There are various degrees of nasality, according as the nose passage is completely or only partially open. Many speakers pronounce all their vowels with imperfect closure of the nose passage, which gives their pronunciation the so-called nasal twang.' This nasality is so common in North America, especially in New England, as to constitute a characteristic feature of American pronunciation. It is, however, very frequent in London English also.

NARROW AND WIDE.

24. These are very important general modifications of all sounds produced or modified in the mouth. They depend on the *shape* of the tongue. In forming narrow

^a The exact formation of the French nasals has long been a disputed question. The guttural element I believe to be some kind of lateral cheek (and, perhaps, pharynx) compression: it is somewhat vaguely described by Mr. Bell as consisting in a 'semi-consonant contraction of the guttural passage.'

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NARROW AND WIDE.

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sounds there is a feeling of tenseness in that part of the tongue where the sound is formed, the surface of the tongue being made more convex than in its natural 'wide' shape, in which it is relaxed and flattened. This convexity of the tongue naturally narrows the passage—whence the name. This narrowing is produced by raising, not the whole body of the tongue, but only that part of it which forms, or helps to form, the sound. Thus, starting from the mid-wide vowel (*e*) we may narrow the passage either by raising the whole body of the tongue to the high (*i*) position, or else by contracting the muscles in the front of the tongue so as to make it more convex, without otherwise changing its height. We may then raise this narrow-mid (*e*) to the high (*i*) position. Although in (*i*) the tongue is nearer the palate than in the wide (*e*), we can never change (*e*) into (*i*) by simply raising the tongue: we must alter its shape at the same time from wide to narrow. If (*e*) is raised so high as to produce a distinct consonantal hiss, it will still remain wide in sound.

25. The distinction of narrow and wide applies to consonants, and not (as Mr. Bell assumed) to vowels only. The distinction between French and English (*w*) in 'oui' and 'we' is that the French (*w*) is narrow, the English wide, the former being consonantized (*u*), the latter (*u*). In English the hisses are generally wide, in French narrow. Narrow (*s*) may be heard in energetic hissing, wide (*sh*) in gentle hushing^a.

^a Mr. Bell, who first noticed the distinction of narrow and wide, explains it as due to tension and relaxation of the pharynx. I for a long time held to this view, imagining the tension of the tongue to be something secondary and merely sympathetic. However I afterwards noticed that the sense of pharyngeal and palatal tension was always concentrated on that part of the mouth where the sound was

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26. The distinction being a delicate one is not to be acquired practically without considerable training. Beginners are apt to confuse widening with lowering of the tongue, especially when the wide vowel is unfamiliar. The best way to avoid this is to run through a whole series from high to low, first narrow and then wide, taking, for instance, first (i, e, æ), then (i, e, æ). In this way a clear idea of the distinction between changes in the *shape* and in the *position* of the tongue will be obtained.

27. A narrow vowel may be widened by trying to utter it as lazily and listlessly as possible, without altering the position of the tongue ^a.

VOWELS.

28. A vowel may be defined as voice (voiced breath) modified by some definite configuration of the super-glottal passages, but without audible friction ^b.

29. *Tongue Shape: Narrow and Wide.* The most important general modifications are those which cause the distinction of narrow and wide, already described. Wide

formed, in front sounds on the hard palate. This was a *reductio ad absurdum*, showing that the feeling was really imaginary. The relation was thus reversed: the tongue tension was shown to be the real cause of narrowness and wideness, and the other feeling to be imaginary and secondary. I do not believe that the shape of the pharynx, the approximation of the palatal arches, &c., have any effect in producing distinctive vowel sounds.

^a Mr. Bell told me that he tried this method with success in teaching Frenchmen the English (i) and (u).

^b *Whispered* vowels occur as integral elements of ordinary loud speech in some native American languages. See Haldeman, quoted by Ellis, E. E. P. p. 1194.