

BOOK I.

SOUNDS.



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CHAPTER I.1

ELEMENTS OF SPEECH; and particularly CONSONANTS.

THE human voice may be regarded as a continuous stream of r air, emitted as breath from the lungs, changed, as it leaves the larynx, by the vibration of two ligaments (called chordæ vocales) into vocal sound, and either modified by various positions, or interrupted or compressed by various actions, of the uvula, the tongue, and the lips. In a whisper the ligaments do not vibrate, but otherwise the description holds good.

Interruption by complete contact, or compression by approximation of certain parts of the organs, or vibration of the tongue or uvula, produces *consonants*.

Modification, without interruption or compression, and without vibration of the tongue or uvula, produces volvels.

CONSONANTS.

Consonants admit of a fourfold classification, according to

- the completeness or incompleteness of the contact;
- the accompaniment or absence of vocal sound;
- 3. the position of the organs, where the contact takes place;
- 4. the passage of the breath through the mouth or nose,
- ¹ In this and the next two Chapters, much use has been made of Lepsius' Standard' Alphabet (1863); Max Müller's Survey of Languages (1855) and Lectures 2nd series; Melville Bell's Principles of Speech (1863); Brücke's Physiologie der Sprachlaute (1856).

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- 1. (a) If the contact is complete, so as to cause an entire in-3 terruption of the passage of the breath, we get *mutes* (explosive consonants, checks, &c.); as p, b; k, g; t, d.
- (b) If the contact is only partial, i.e. if the organs do but approximate more or less closely to each other, we get a continuous sound caused by the friction of the breath against the parts. These sounds are called *fricative* consonants (continuous, spirants, flatus, breathings, &c.); as s, z; sh, zh (French j); th; f, v; &c.
- 2. (a) Again the contact or approximation may be made with 4 the vocal chords wide apart, in which case a whisper only takes place. These consonants are called *sharp* or *voiceless* (*breathed*, *hard*, *surd*, tenues, &c.); as p, k, t, s, sh, th (in *thin*), f, wh, h (in *buge*), rh (as r in French *theatre*, *facre*), &c.
- (b) If the contact or approximation is made, with the vocal chords close to one another, the consonants are called flat or voiced (soft, blunt, sonant, mediæ, &c.); as b, g, d, z, zh, th (in then), v, w, y, r, &c. The chords being thus ready to vibrate usually do vibrate causing voice, either during the approximation, or, in the case of a mute, the instant that the contact is released. But the sound of the voice is not essential, as, in whispering, a rustle in the throat takes its place. (See App. A. vii.)
- 3. Again the parts of the mouth which are put in contact or 5 approximation or movement are very various, and the sound is modified accordingly. For the purposes of classification in European languages five parts may be especially distinguished; viz. the lips, the throat (or rather the soft palate just above the larynx), the hard palate, the teeth, and the tongue.
- (a) Consonants formed at or with the lips are called *Labial*; viz. p, b, m, w, and labial f, v. The ordinary f, v are *labio-dentals*, being formed by the under lip and upper teeth.
- (b) Consonants formed in the throat (or soft palate) are called Guttural; viz. k (c, q;), g, ng, ch (in loch).
- (c) Consonants formed at the hard palate are called *Palatal*, of which some approach nearer to gutturals, some to dentals: such are y, ch (in Germ. *Ich*, or h in Engl. *buge*), sh, French j. (The Italian c (in *cima*) i. e. English ch (in *church*), and Italian g (in *giro*) i. e. English j (in *join*), which are sometimes classed as *palatals*, appear to be really double consonants; viz. ch = tsh; j = dzh where zh is French j.)



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Elements of Speech.

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- (d) Consonants formed at or just above the teeth are called *Dental*; viz. t, d, n; th; s, z.
- (e) Two other consonants, called *Lingual* consonants or *liquids* (or *trills*), are r, 1. r is caused by the breath passing over the tip of the tongue, which is more or less vibrated: 1 is caused by the breath passing over the sides of the back of the tongue, which is then removed from its position to complete the sound. For an r (common in France), caused by vibration of the uvula, see App. A.
- 4. If the uvula be lowered so as to obstruct the passage of the 6 air through the mouth, but allow it to vibrate in the cavities of the nose, a nasal sound is produced. If the organs are otherwise in the positions required for b, d, g, but the air passes into the nose, the nasal consonants m, n, ng (a single sound as in sing) are respectively produced. (The palatal n has much the same sound as a dental n.)

The nasals resemble the *explosive* consonants in requiring a vowel before and after to give the full effect; they resemble the *continuous* consonants in the possibility of continuing the sound, which is however that of the first half only of the consonant.

5. The semivowels \mathbf{w} and \mathbf{y} will be best described after the 7 vowels (§ 23).

Another letter has yet to be noticed, viz. h (spiritus asper). This is a mere expulsion of breath through the perfectly open glottis, i.e. with the vocal chords apart, not approximated and vibrating. h stands to the vowels, as p to b, k to g, &c.

(If h is breathed immediately after an explosive consonant we get sounds, represented in Greek, viz. $\phi = \mathfrak{p} + h$, $\chi = k + h$, $\theta = t + h$, and in Sanscrit $(\mathfrak{g} + h \& c.)$. A strong articulation of consonants e.g. by Scotchmen or Irishmen gives a similar sound.)

There is also a very slight sound heard before any initial vowel, and best caught when two vowels come together, but are pronounced separately, as in *go over*. This is rarely expressed by any letter. It is the spiritus lenis of the Greeks.

The principal sounds in European languages may be tabulated 8 as follows, the letters being supposed to be sounded as in English, except where it is otherwise stated.



6	Sounds.				[Book I.
	EXPLOSIVE. Sharp. Flat.		NASAL. Usually	FRICATIVE. Sharp. Flat.	
	Snarp.	riat.	flat.	(wh ¹	w¹
LABIAL.	р	ъ	m	labial f	labial 🔻
LABIODENTA	L.			ordinary f	ordinary v
GUTTURAL.	k	g hard	i ng	Scotch loch (Germ. ch after a or 0)	g in Germ. tage
PALATAL.				h in huge (nearly Germ. cl after 1 or e) sh	y n nearly g in Germ. wiege zh (French j)
LINGUAL.				whispered r Welsh (?) 11	r 1
DENTAL.	t	đ	n	$ \begin{cases} s \\ th \\ (in thin) \end{cases} $	z th (in <i>then</i>)

It may be added that s, z, and sometimes sh and French j are called *sibilants*.

CHAPTER II.

COMBINATION OF CONSONANTS.

SINGLE consonants may be sounded either before or after a 9 vowel. But the semivowels y and w are sounded only before a vowel.

A continuous consonant has always the same sound whether its vowel be before or after: but an explosive consonant has not the same. The full pronunciation of an explosive consonant requires both the closing and opening of the organs. Thus in aponly half the p is properly sounded: in pa we have the other half. The full pronunciation is heard in apa, or, as commonly written, ap-pa. In ap-ka the first half of p and the second half of k is sounded.

Writing consonants double has either an etymological origin, when it is done to preserve the memory of distinct sounds now lost; e.g. ac-cado for ad-cado; ἄλλ-ος compared with ali-us; &c., or a phonetic origin, as in English it is used to distinguish a short accented vowel from a long one, e.g. kite, kitten; &c. In either case the consonant is wholly pronounced once only.

¹ The continuous part of the sound $\mathbf{w}\mathbf{h}$ is really a *blowing*, the continuous part of \mathbf{w} is the vowel \mathbf{u} .



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Combination of Consonants.

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Two or more consonants may be pronounced with only one to vowel, but the possible combinations are somewhat different, when the vowel is *before* the consonants and when it is *behind* them. When the vowel is sounded after the consonants, the combination may be called *initial*; when the vowel is before the consonants. *final*.

(The Germans give the name Anlaut, Inlaut, Auslaut (on-sound, in-sound, out-sound) to the sound of a consonant with the vowel following, on both sides, and preceding, respectively.)

An *Initial*¹ combination may not consist of a liquid or nasal ¹¹ followed by any other consonant, except that an **m** may be followed by **n**, nor of a fricative, except a sibilant, followed by an explosive: nor of two explosives unless the former of the two be a labial or guttural, the latter a dental. Semivowels are never followed by any consonant.

Of the rarer combinations may be given as instances: Greek, τλάω, πτύω, κτείνω, ψεύδω, ξαίνω, μνῆμα, φθίνω, χθές. German, Pfanne, Pflaum, Pfropf, Zerren (i.e. tserren).

A final combination may not consist of a nasal preceded by any 12 consonant, except a liquid; nor of a liquid preceded by any consonant, except that 1 may be preceded by r; nor readily of two explosives or two fricatives, unless the latter of the two be a dental: e.g. akp, apk, atk, atp, seem harsher than akt, apt; and (taking th as in English and ch as in German) athf, asf, athch, afch, than afth, afs, achth, achf.

Instances of the rarer combinations are English, film, kiln, strength, watch, texts, cringed. German, kopf, dumpf, obst, balgst, birgst.

Neither in initial nor final combinations are sharps pronounceable 13 before flats, or readily flats before sharps. When they occur together in writing, the former of the two, if a sharp, is usually changed in speaking into the corresponding flat; if a flat, into the corresponding sharp. Sometimes the latter is changed, to suit the former, which is retained: e.g. obst is either pronounced opst, or obzd. (But midst, striv'st, hugg'st are pronounced without this change.)

Nor can either an initial or final combination contain more explosives than two, with or without a fricative before or after each.

A syllable is such a sound or combination of sounds as can be 14 uttered with one breath. It may consist of a vowel (or diphthong) only, or of a vowel (or diphthong) combined with one or more consonants.

A word consists of as many syllables, as it has vowels separately pronounced.

1 The languages of the Græco-Latin and Teutonic stocks are alone regarded in the following statements.



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A single syllable may contain a vowel with two or more consonants on each side of it. Two consecutive syllables may therefore, if the first ends and the second begins with a combination of consonants, bring together in the middle a twofold aggregation of consonants.

The aggregation of consonants in the middle of a word is limited only by the necessity of its being capable of precise division into a pronounceable final combination followed by a pronounceable initial combination.

But in ordinary pronunciation a consonant between two vowels is uttered partly with both. The real division of the syllables is therefore neither before nor after the consonant, but in the middle of it, i.e. after the closing of the organs and before the opening.

Accordingly a valid aggregation of consonants in the middle of a word must be such that some one of the consonants shall fitly close the first syllable, and also open the second syllable: e.g. actra is divisible into act-tra; but act-pra is not divisible into act-tra or into actp-pra, tpra not being a possible initial combination, nor actp a possible final combination.

The division of a word into syllables is in modern languages r6 decided rather by the etymological than by a phonetic division. So far as this phonetic principle is disregarded, the word is either resolved not into separate syllables, but into separate words, or else a vowel is lightly interposed between the consonants by the opening of the organs to complete one consonant before uttering the next; e.g. actpra becomes actepra or acetepra.

On the division in Latin, see Chap. XI.

CHAPTER III.

VOWELS AND COMBINATIONS OF VOWELS.

THE shape of the mouth determines the quality of the vowel. 17
There are two great agents in modifying vowel sound, the tongue
and the lips. The tongue by the elevation of its hinder part towards
the palate diminishes internally the oral channel: the lips being protruded lengthen the oral channel and contract the external aperture.

The purest and simplest vowel is Italian a, English ah. The rextremes are Italian i (i.e. English ee), being the vowel with the narrowest channel: and Italian u, English oo, the vowel with the longest channel and narrowest external aperture. Of these a is formed nearest to the guttural point of contact; i at the palato-dental point; u at the labial.

Other vowels, i.e. other modifications of vowel sound, may be 19 regarded as intermediate either between a and 1 (lingual vowels), or



Vowels and Combinations of Vowels. Chap, III.

between a and u (labial or round vowels), or partaking in some degree of the characters of both lines. Each vowel also may be wide or close, according as the pharynx (i.e. the cavity at the back of the tongue above the larynx) is more or less expanded.

It is difficult to put any precise limit to the number of possible vowels, most nations, and, indeed, most individuals, differing more or less from one another in vowel pronunciation. But the vowels most worth notice for an English student of Latin are given in the following list. All may be either long or short. (Ellis's palæotypic symbols and Bell's names are subjoined to each. Most of the parallelisms are from Ellis.)

- 1. Germ. a (a. 'Low back wide'). Scot. man; Germ. mann, māhnen.
- 2. Ital. a (a. 'Mid back wide'). Engl. father; Ital. matto, mano; Fr. chătte.
- A common Engl. vowel (a or H. 'Mid mixed' or 'Mid back'). Engl. up, son, does; nearly tailor, paper; long in urn, word, fern, bird; nearly Fr. que je me repente.
- 4. Ital. close o (uh. 'High mixed wide round'). Ital. croce, dolce,
- Roma. It sounds to English ears between 3 and 9, but nearer 9.
 5. Engl. short o (o. 'Low back wide round'). Engl. odd, doll, John, dog.
 - 6. Engl. aw (A. 'Low back round'). Engl. awed, tall, pawn;
- Austrian a; short in Engl. august.
 7. Ital. open o (o. 'Mid back wide round'). Cumberland home; Ital. uomo; French short o, e.g. homme; Germ. short o, e.g. gold.
- 8. French au (o. 'Mid back round'). Engl. omit, window, home
- (but cf. § 21); Germ. long o, e.g. gross.

 9. Engl. short u (u. 'High back wide round'). Engl. pull, book, wood.
- Ital. u (u. 'High back round'). Engl. brute, rule, do, mood; 10.
- short in French poule, coupe.

 11. French eu (ce. 'Mid front wide round'). Fr. peur, jeune;
- Germ. ö, e.g. böcke, Göthe.

 12. French u (y. 'High front wide round'). Devonshire combe,
- you; French du, hutte; Germ. ü, e.g. lücke, Müller.

 13. Engl. short a (æ. 'Low front wide'). Engl. hat, man; long in
- (sometimes) half, ask, and in Somersetshire Bath.

 14. Ital. open e (E. 'Low front'). Scot. ell, pet; Ital. bello, letto, bene, Galileo; Germ. ä, e.g. Väler; Fr. même.

 15. Engl. short e (e. 'Mid front wide'). Engl. ell, pet, men; Scot. ill, pit; Germ. fett, eben; Fr. elle, les.

 16. Ital. close e (e. 'Mid front'). Engl. a in aerial; Ital. quello,
- detta, remo; Fr. é, e.g. été. 17. Engl. short i (i. 'High front wide'). Engl. shin, fit, pity; the
- long sound is heard in singing and in Icelandic. 18. Ital. i (i. 'High front'). Engl. machine, feet; Scot. pity; the ordinary Fr., Germ., and Ital. i.



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Of these 5 to 18 may be arranged tabularly from their common base a to each of the extremes:

Labio-lingual. Labial. Lingual. Wide Close Wide Close Wide 6 Engl. aw Ital. open e Engl. short o Engl. short a 8 II 16 Ital. open o French au French eu Engl. short e Ital. close e 10 12 18 Engl. short u Ital. u French u Engl. short i

A diphthong is the sound made by the voice while passing from 20 one vowel position to another. The precise sound varies according to (1) the quality of the limiting vowels; (2) the distance between them; (3) the evenness of the rate of speed. The most usually recognized diphthongs are formed when the passage is from an open to a close position, i.e. when the initial position is nearer to a, and further from i or u than the final position is.

The following may here be noted, the limiting vowels being 2x denoted by their numbers in the list given above. (Ellis' symbol is added in brackets. On diphthongs with Engl. r see Appendix A.)

2 to 10 (au). Germ. haus, laut. 3 to 10 (ou). Engl. now, bough, house, loud. 8 to 10 (oou). Southern Engl. long o, the second element being faint, e.g. no, bone, hose.

13 to 10 (æu). Cockney town.
15 to 10 (æu). American town; Ital. and Span. Europa.
2 to 18 (ai). Engl. ay (yes), a broad sound of I, Isaiah; Germ. hain, Kaiser, theil; Ital. ai (with first element prolonged), daino, laido; French ai (with second element prolonged), faience.

3 to 18 (ai). Engl. long i, e.g. fine, eye, buy, die.
13 to 18 (ai). Cockney and Scotch long i.
16 to 18 (eei). Southern Engl. long a, the second element being faint; e.g. fate, fain, feint.
5 to 18 (3i). Engl. oi, e.g. boil, boy, oyster.
7 to 12 or 18 (oy or oi). Germ. eu, e.g. heute, euch.

A diphthong sometimes gives way to an intermediate vowel, 22 which yet is often written as a diphthong. Comp. Germ. au, ai with French au, ai. Again, an intermediate vowel is sometimes resolved into a diphthong; e.g. Cockney au for ō.

The sounds represented in English by w and y when initial 23 are usually called semivorvels. They easily arise when the voice passes from a closer to a more open vowel position; i.e. w in passing from u or o, y in passing from i or e, backwards towards a. The consonantal character (compare Engl. we with Fr. oui) is produced by very slight pressure of the lips in the case of w, of the tongue and palate in the case of y, followed by instant separation.



Chap. IV.

Laws of Phonetic Change.

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CHAPTER IV.

LAWS OF PHONETIC CHANGE'.

- i. Phonetic change in words is either *voluntary*, e.g such as ²⁴ is made for the purposes of inflexion, or *involuntary*. The latter alone is the subject of the following statements.
- ii. Involuntary phonetic change is the result of a struggle be- 25 tween the physical tendency to reduce the effort of articulation, and the intellectual or instinctive desire of preserving any parts of the word which are characteristic of its meaning. The latter acts mainly by way of resistance.
- e.g. ab is much seldomer changed in composition than sub, because of the danger of confusion with ad.

In the passive voice forms like amabaris, amaberis, amareris are shortened into amabare, &c., but amaris is not shortened to amare lest it should be confused with the present infinitive.

iii. The normal condition of these forces is one of apparent ²⁶ equilibrium, but really of slow conflict, which however is called into greater and more perceptible activity, when a new sound or syllable is added to the word, as is done by inflexion or derivation or composition in order to adapt the word to a modification or enlargement of the conception.

Sudden phonetic change.

- iv. Such an addition may produce phonetic changes in two 27 ways: (1) by its adding to the length or weight of the word; and (2) by its bringing into contact sounds, which do not then admit of easy articulation in their integrity.
- ¹ The illustrations throughout this Chapter are meant as illustrations only, not as in any way exhausting the phenomena. Many of the facts are stated more fully as regards Latin in the sixth and following Chapters.