

## CHAPTER 3

# The Description of Speech Sounds

### 3.1 Vowels and Consonants

It is usual to divide all speech sounds into two broad categories – vowels and consonants. In the production of vowels the air comes out freely through the mouth. There is no closure of the air-passage and no narrowing of the passage that would cause audible friction. All other sounds are called consonants.

### 3.2 Description of Consonants

While describing consonants we have to indicate

- (i) the nature of the air-stream:
  - (a) whether it is *pulmonic* (set in motion by the lungs) or not.
  - (b) whether it is *egressive* (coming out) or *ingressive*.
- (ii) whether the sound is *voiced* or *voiceless*, that is, whether the vocal cords vibrate or not.
- (iii) whether the soft palate is raised or lowered, that is, whether the air-stream passes
  - (a) through the mouth only (*oral* sounds);
  - (b) through the nose only (*nasal* sounds); or
  - (c) through both the mouth and the nose (*nasalized* sounds).
- (iv) the place of articulation, that is, where the closure or narrowing takes place.
- (v) the manner of articulation, that is, the kind of closure or narrowing.

All English sounds are produced with egressive lung air. Some English consonants are voiceless; these are /p, t, k, tʃ, f, θ, s, ʃ, h/. Others are voiced, namely, /b, d, g, dʒ, v, ð, z, ʒ, m, n, ŋ, l, r, j, w/.

### 3.2.1 Place of Articulation

Consonants can be classified according to the place of articulation as follows:

- Bilabial* – articulated by the two lips, e.g., English / p, b, m, w /.
- Labio-dental* – articulated by the lower lip against the upper teeth, e.g., English / f, v /, Hindi and Indian English / v /.
- Dental* – articulated by the tip of the tongue against the upper teeth, e.g., English / θ, ð /, Hindi and Indian English / t<sup>h</sup>, d /.
- Alveolar* – articulated by the blade of the tongue against the teeth-ridge, e.g., English / t, d, s, z, n, l /.
- Post-alveolar* – articulated by the tip of the tongue against the back of the teeth ridge, e.g., English / r /.
- Retroflex* – articulated by the tip of the tongue curled back against the front of the hard palate, e.g. Hindi / t, d, /.
- Palato-alveolar* – articulated by the blade of the tongue against the teeth-ridge, with the front of the tongue raised towards the hard palate, e.g., English / tʃ, dʒ, ʃ, ʒ /.
- Palatal* – articulated by the front of the tongue against the hard palate, e.g., English / j /.
- Velar* – articulated by the back of the tongue against the soft palate, e.g., English / k, g, ŋ /.
- Glottal* – produced by an obstruction or narrowing between the vocal cords, e.g., English / h /.

### 3.2.2 Manner of Articulation

The closure at the place of articulation can be either complete or partial, or there may be only a narrowing that causes friction.

Consonants can be classified according to the manner of articulation as follows:



**Plosive** - There is a complete closure of the air - passage; pressure is built up, and then the air is released with explosion, e.g. English / p, b, t, d, k, g /, Hindi and Indian English / t<sup>h</sup>, d /.

**Affricate** - There is a complete closure of the air passage in the mouth; then the organs are separated slowly so that friction is heard, e.g., English / tʃ, dʒ /.

**Nasal** - There is a complete closure of the air passage in the mouth; the soft palate is lowered and the air escapes through the nose, e.g., English / m, n, ŋ /.

**Roll** - There are a number of rapid taps made by a flexible organ against a firmer surface. For example, some people pronounce English / r / by making the tip of the tongue strike against the teeth-ridge a number of times.

**Flap** - There is only one tap; for example English / r / in *very* is pronounced by making one tap of the tip of the tongue against the teeth-ridge.

**Lateral** - At some point in the mouth, there is a closure in the middle, but the air escapes through the sides, e.g., English / l /.

**Fricative** - There is a narrow passage for the air between two organs, and friction is produced when the air passes through it, e.g., English / f, v, θ, ð, s, z, ʃ, ʒ, h /, English / r / in words like *train* and *draw*.

**Frictionless Continuant** - There is no closure or friction, but the sound has a consonantal function, e.g., English / r / in words like *rain*, *red*, etc., and Hindi and Indian English / v /.

**Semi-Vowel** — A vowel glide with a consonantal function, e.g., English / j, w /.

### 3.3 Description of Vowels

In the production of vowels the air from the lungs comes out in a continuous stream through the mouth, and the vocal cords vibrate to produce 'voice'. There is no closure of the air passage and no narrowing that would cause friction. The note produced by the larynx is modified by the shapes of the resonating cavities of the pharynx, the mouth and the nose. These in turn depend on the positions of the soft palate, the tongue and the lips.

The soft palate is raised for oral vowels; all English vowels are oral. If the soft palate is lowered, we get nasalized vowels, which are used in Hindi, for instance.

Any part of the tongue can be raised towards the roof of the mouth, and there can be different degrees of raising of the tongue. Vowels in the production of which the highest part of the tongue is the front are called *front* vowels, e.g., English (R.P.) / i:, ɪ, e, æ, ʌ /; those in which it is the back are called *back* vowels, e.g., English (R.P.) / ɑ:, ɒ, ɔ:, ʊ, u: /; and those in which it is the centre are called *central* vowels, e.g. English (R.P.) / ɜ:, ə /. According to the degree of raising of the tongue, vowels are divided into four categories—close (as near as possible to the roof of the mouth without causing friction or making a closure), e.g., English / i:, u: /; half-close; half-open; and open (as low as possible, e.g., English (R.P.) / ɑ:, ɒ /).

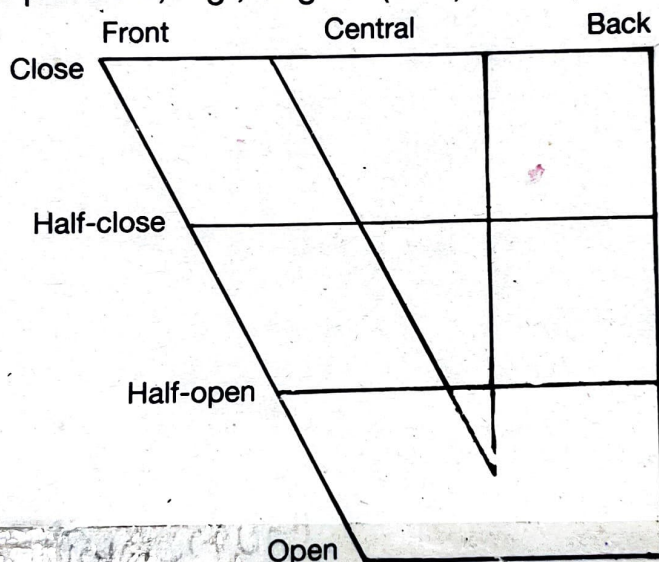


Fig. 2 Classification of Tongue Positions for Vowels

The lips can be *spread*, as for English / i: /; *neutral*, as for English (R.P.) / e /; *open*, as for English (R.P.) / ɑ: /; *open rounded*, as for English (R.P.) / ɒ /; or *close rounded*, as for English / u: /.

If the quality of a vowel does not change, it is sometimes called a *pure* vowel, e.g., English (R.P.) / i:, ɑ:, ɔ:, u: /. Vowels which

1 See Section 5.1



involve a gliding movement from one quality to another are called *diphthongs*, if the glide takes place within the same syllable.

### **3.4 Use of Phonetic Symbols**

It is convenient to use the phonetic symbols suggested by the International Phonetic Association to represent the sounds of speech.