

The Fifth Lecture:

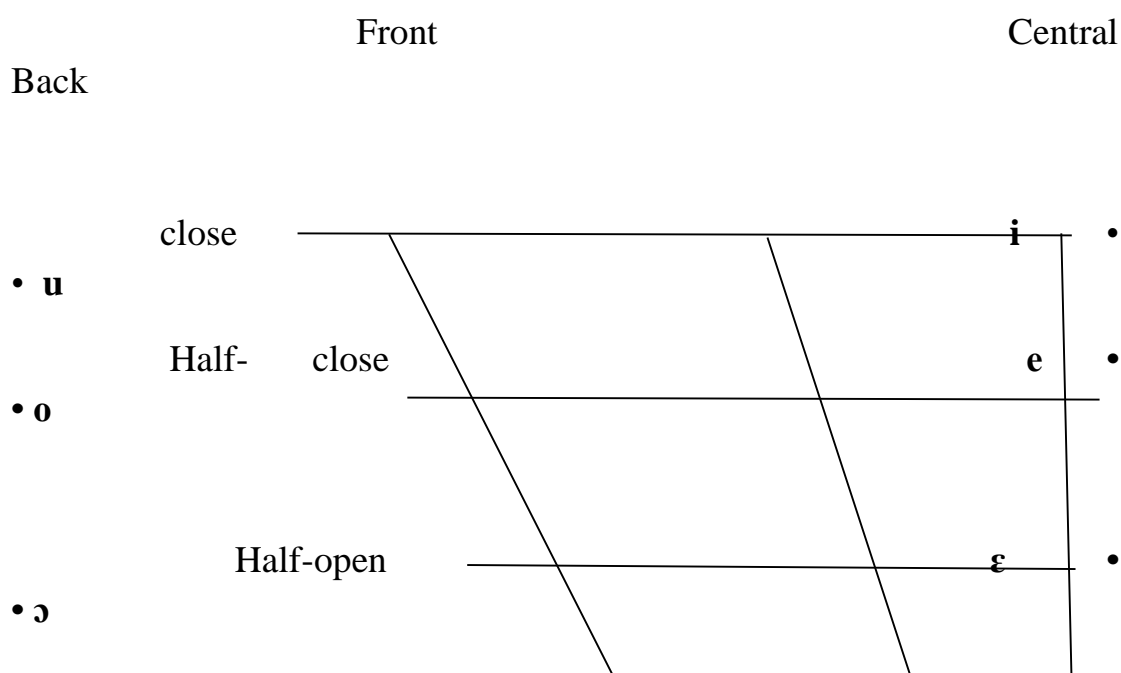
English Vowels

Earlier we mentioned that in the production of vowels in the pharynx and the mouth (the oral tract), there is no obstruction and no narrowing of a degree that causes audible friction. All vowels are soft, voiced and musical in effect. They are produced with a primary articulation made by the front, centre or back of the tongue (the tip and blade of the tongue do not participate) and located at the front, centre or back of the palate. It is possible to articulate vowels in a voiceless method when there is no vibration in the vocal cords, as in whispering a word that contains a vowel. A vowel is a sound produced by the unobstructed passage of the air stream without the oral cavity being constricted enough to cause audible friction. Such a definition of vowels might be adequate in distinguishing vowels from consonants. But it does not help us in distinguishing vowels from vowels. Therefore, what distinguishes one vowel from other is the modification of the tone resulting from modification in the shapes and sizes of the resonating chambers through which the tone passes, via: the pharyngeal cavity, the nasal cavity, and the mouth. Mainly responsible for such modifications of the resonating chambers are the soft palate, the lips, and the tongue. Vowels have a relatively open gap of articulation more than that in consonants. Vowels are produced more slowly as continuants. They are the most prominent, long lasting acoustic cues and more prosodic information may be provided by using them. Thus vowels carry information about stress, speaker identity and emotional tone.

The General Criteria for the Description of Vowels

Vowels are produced with a voiced egressive air-stream passing through different mouth- shapes. The various positions of the tongue and the shapes of the lips cause these differences in the shape of the mouth. A detailed description of the position of the tongue for the vowels will not help us to pronounce them correctly because it is very difficult to observe or to feel the tongue differences . A good question arises that is ' in what ways do vowels differ from each other?' The following are the general criteria to describe vowels:

1. The shape and position of the tongue. They refer to two possibilities: 1) the vertical distance between the upper surface of the tongue and the hard palate (high, middle or low) and 2) the part of the tongue (front, center or back) which is raised highest.
2. The position of the soft palate refers to its raising so that the nasal cavity is shut off to produce oral vowels, or lowering to produce nasalized vowels.
3. The shapes of the lips include three positions: spread that is formed with the corners of the lips moved away from each other such as /ɪ, i:/, neutral is made where the lips are neither rounded nor spread such as /ə, ʌ/, or rounded is formed where the corners of the lips are brought towards each other and the two lips pushed forwards, e.g. /u, u:/. Phoneticians make use of the system of cardinal vowels in order to standardize their reference to vowels. This system must not be identified with the vowels of any actual language. It refers to theoretical points on which the trained phonetician can scheme the vowel sounds of particular languages. There are primary cardinal vowels that are most familiar to most European languages speakers, they include /i, e, ε, a, u, o, ɔ, ɑ/, and secondary cardinal vowels, that are less familiar, include /y, ø, œ, æ, ɐ, ʌ, ʏ, ʉ, ɯ, ɨ / . The following diagram shows the set of vowels that do not belong to any particular language.



• a •

Open

The front primary cardinal vowels /i, e, ε, a/ and the back /ɑ/ are articulated with spread lips, while the other back cardinal vowels /u, o, ɔ/ are articulated in different degrees of the rounding of lips. The cardinal vowels are eighteen and may be transformed into their nasalized counterparts when the soft palate is lowered. They are classified according to lip shapes, with corresponding tongue positions:

Unrounded vowels include /i, e, ε, a, ɑ, ʌ, ɜ, ɯ, ɨ/

Rounded vowels include /y, ø, œ, ɐ, ɔ, o, u, ʊ/

The cardinal vowels inform the learner the range of vowels that human beings are able to articulate and to learn how to describe, classify and compare the vowels of any particular language.