



## **Tikrit University College of Education**

### **English Department**

### **Places of Articulatory Gestures**

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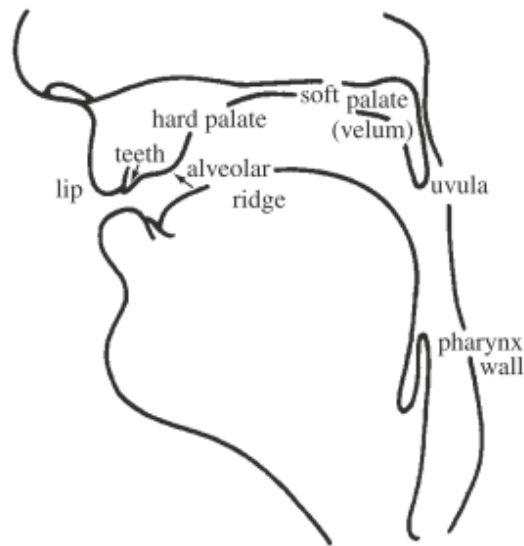
### **First Year Students**

Places of Articulatory Gestures The parts of the vocal tract that can be used to form sounds are called articulators. The articulators that form the lower surface of the vocal tract are highly mobile. They make the gestures required for speech by moving toward the articulators that form the upper surface. Try saying the word capital and note the major movements of your tongue and lips. You will find that the back of the tongue moves up to make contact with the roof of the mouth for the first sound and then, comes down for the following vowel. The lips come together in the formation of p and then, come apart again in the vowel. The tongue tip comes up for the t and again, for most people, for the final l. The names of the principal parts of the upper surface of the vocal tract are given in Figure 1.6. The upper lip and the upper teeth (notably the frontal incisors) are familiar enough structures. Just behind the upper teeth is a small protuberance that you can feel with the tip of the tongue. This is called the alveolar ridge. You can also feel that the front part of the roof of the mouth is formed by a bony structure. This is the hard palate. You will probably have to use a fingertip to feel farther back. Most people cannot curl the tongue up far enough to touch the soft palate, or velum, at the back of the mouth. The soft palate is a muscular flap that can be raised to press against the back wall of the pharynx and shut off the nasal tract, preventing air from going out through the nose. In this case, there is said to be a velic closure. This action separates the nasal tract from the oral tract so that the air can go out only through the mouth. At the lower end of the soft palate is a small appendage

hanging down that is known as the uvula. The part of the vocal tract between the uvula and the larynx is the pharynx. The back wall of the pharynx may be considered one of the articulators on the upper surface of the vocal tract.

**Figure 1.6** The principal parts of the upper surface of the vocal tract.

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The tip and blade of the tongue are the most mobile parts. Behind the blade is what is technically called the front of the tongue; it is actually the forward part of the body of the tongue and lies underneath the hard palate when the tongue is at rest. The remainder of the body of the tongue may be divided into the center, which is partly beneath the hard palate and partly beneath the soft palate; the back, which is beneath the soft palate; and the root, which is opposite the back wall of the pharynx. The epiglottis is attached to the lower part of the root of the tongue.

Bearing all these terms in mind, say the word peculiar and try to give a rough description of the gestures made by the vocal organs during the consonant sounds. You should find that the lips come together for the first sound. Then the back and center of the tongue are raised. But is the contact on the hard palate or on the velum? (For most people, it is centered between the two.) Then note the position in the formation of the l. Most people make this sound with the tip of the tongue on the alveolar ridge. Now compare the words true and tea. In which word does the tongue movement involve a contact farther forward in the mouth? Most people make contact with the tip or blade of the tongue on the alveolar ridge when saying tea, but slightly farther back in true. Try to distinguish the differences in other

consonant sounds, such as those in *sigh* and *shy* and those at the beginning of *fee* and *thief*. When considering diagrams such as those we have been discussing, it is important to remember that they show only two dimensions. The vocal tract is a tube, and the positions of the sides of the tongue may be very different from the position of the center. In saying *sigh*, for example, there is a deep hollow in the center of the tongue that is not present when saying *shy*. We cannot represent this difference in a two-dimensional diagram that shows just the midline of the tongue—a so-called mid-sagittal view. We will be relying on mid-sagittal diagrams of the vocal organs to a considerable extent in this book. But we should never let this simplified view become the sole basis for our conceptualization of speech sounds. In order to form consonants, the airstream through the vocal tract must be obstructed in some way. Consonants can be classified according to the place and manner of this obstruction. The primary articulators that can cause an obstruction in most languages are the lips, the tongue tip and blade, and the back of the tongue. Speech gestures using the lips are called labial articulations; those using the tip or blade of the tongue are called coronal articulations; and those using the back of the tongue are called dorsal articulations. If we do not need to specify the place of articulation in great detail, then the articulators for the consonants of English (and of many other languages) can be described using these terms. The word *topic*, for example, begins with a coronal consonant; in the middle is a labial consonant; and at the end is a dorsal consonant. Check this by feeling that the tip or blade of your tongue is raised for the first (coronal) consonant, your lips close for the second (labial) consonant, and the back of your tongue is raised for the final (dorsal) consonant. These terms, however, do not specify articulatory gestures in sufficient detail for many phonetic purposes. We need to know more than which articulator is making the gesture, which is what the terms labial, coronal, and dorsal tell us. We also need to know what part of the upper vocal tract is involved. More specific places of articulation are indicated by the arrows going from one of the lower articulators to one of the upper articulators in Figure 1.8. Because there are so many possibilities in the coronal region, this area is shown in more detail at the right of the figure. The principal terms for the particular types of obstruction required in the description of English are as follows.

1. Bilabial (Made with the two lips.) Say words such as *pie*, *buy*, *my* and note how the lips come together for the first sound in each of these words. Find a comparable set of words with bilabial sounds at the end.

2. Labiodental (Lower lip and upper front teeth.) Most people, when saying words such as *fie* and *vie*, raise the lower lip until it nearly touches the upper front teeth.

3. Dental (Tongue tip or blade and upper front teeth.) Say the words *thigh* and *thy*. Some people (most speakers of American English as spoken in the Midwest and on the West Coast) have the tip of the tongue protruding between the upper and lower front teeth; others (most speakers of British English)

have it close behind the upper front teeth. Both sounds are normal in English, and both may be called dental. If a distinction is needed, sounds in which the tongue protrudes between the teeth may be called interdental.

4. Alveolar (Tongue tip or blade and the alveolar ridge.) Again there are two possibilities in English, and you should find out which you use. You may pronounce words such as *tie*, *die*, *nigh*, *sigh*, *zeal*, *lie* using the tip of the tongue or the blade of the tongue. You may use the tip of the tongue for some of these words and the blade for others. For example, some people pronounce [s] with the tongue tip tucked behind the lower teeth, producing the constriction at the alveolar ridge with the blade of the tongue; others have the tongue tip up for [s]. Feel how you normally make the alveolar consonants in each of these words, and then try to make them in the other way. A good way to appreciate the difference between dental and alveolar sounds is to say *ten* and *tenth* (or *n* and *nth*). Which *n* is farther back? (Most people make the one in *ten* on the alveolar ridge and the one in *tenth* as a dental sound with the tongue touching the upper front teeth.)

5. Retroflex (Tongue tip and the back of the alveolar ridge.) Many speakers of English do not use retroflex sounds at all. But some speakers begin words such as *rye*, *row*, *ray* with retroflex sounds. Note the position of the tip of your tongue in these words. Speakers who pronounce *r* at the ends of words may also have retroflex sounds with the tip of the tongue raised in words such as *ire*, *hour*, and *air*.

6. Post-Alveolar (Tongue blade and the back of the alveolar ridge.) Say words such as *shy*, *she*, and *show*. During the consonants, the tip of your tongue may be down behind the lower front teeth or up near the alveolar ridge, but the blade of the tongue is always close to the back part of the alveolar ridge. Because these sounds are made at the boundary between the alveolar ridge and the hard palate, they can also be called palato-alveolar. It is possible to pronounce them with either the tip or blade of the tongue. Try saying *shipshape* with your tongue tip up on one occasion

and down on another. Note that the blade of the tongue will always be raised. You may be able to feel the place of articulation more distinctly if you hold the position while taking in a breath through the mouth. The incoming air cools the region where there is greatest narrowing, the blade of the tongue and the back part of the alveolar ridge.

7. Palatal (Front of the tongue and hard palate.) Say the word you very slowly so that you can isolate the consonant at the beginning. If you say this consonant by itself, you should be able to feel that it begins with the front of the tongue raised toward the hard palate. Try to hold the beginning consonant position and breathe in through the mouth. You will probably be able to feel the rush of cold air between the front of the tongue and the hard palate.

8. Velar (Back of the tongue and soft palate.) The consonants that have the place of articulation farthest back in English are those that occur at the end of words such as hack, hag, and hang. In all these sounds, the back of the tongue is raised so that it touches the velum