

Unit 17

Phonetics: Let's Get To Know Our Mouths!

Cast:

- Li Wei
- Teacher Zhang Dong
- Students
- Language Helper Akram

Scene 17.1. Language Helper Mr. Ahmet tutoring Missionary Li Wei in pronunciation

Mr. Ahmet reads a children's story slowly and with feeling. Missionary Li Wei records it. Missionary Li Wei then tries to read the same story slowly and with feeling. They listen to the two recordings together, and pick out the sounds that trouble missionary Li Wei.

They then set up drills that practice the difficult sounds by getting words where those sounds occur at the beginning, middle and end of words. Missionary Li Wei gets close to watch Mr. Ahmet's lips: Are they rounded? He uses a mirror to see if his lips are as rounded as Mr. Ahmet's. He puts his hand on Mr. Ahmet's throat to see if it is voiced.

Fade and Cut

Scene 17.2. Teacher Zhang Dong in front of class

Teacher Zhang Dong: Getting good pronunciation is very, very important. Even if you master the grammar and memorize the dictionary, you won't be able to communicate very effectively if your pronunciation is bad.

Why do people have a foreign accent when they speak a second language? After all, at birth you had the capacity to produce any language sound in the world! Why is that so much more difficult when you are an adult?

Well, when dealing with a foreign language you will discover sounds you do not have in your native tongue; different languages use different sounds. At birth you had the capacity to produce any language sound. There are over 700 sounds used in the world's languages. Fortunately, most languages only use between 20 and 50 or so of all the possibilities, and with those couple of dozen sounds they work miracles: they tell their stories, their news, their hopes and aspirations, their past, their religion, everything....

Since you only needed a fraction of the hundreds of sounds the human mouth can produce when you were small, your mouth locked into the sounds necessary to make you

sound like every else in your personal world. The muscles needed to make those sounds developed, the other muscles in your mouth didn't.

You will have to discover the range of sounds in your target language, both with respect to its vowels and to its consonants. For native English speakers the muscles of their mouth have locked onto about 44 or 45 sounds, depending on their dialect of English. For us Chinese speakers, some of those sounds are very different from the sounds that we locked into when we were small. In fact, there are some sounds in English and other languages that simply do not exist in Chinese. The opposite is, of course, also true.

Although your mouth still has the capacity to produce all those other sounds, you are no longer working with a “clear slate”. It now takes conscious effort to retrain your ears and reform your mouth to enable you to produce the “strange” sounds of other languages. That's where phonetics comes in.

The recognition, production and recording of sounds is called phonetics. This area of study includes how human speech sounds are made, what types there are, where they are made in the human speech apparatus and how they can be written down. Basically, phonetics carefully analyses how speech sounds are made. Phonetics is also a tool to learn an unwritten language and put it down in writing.

In phonetics training the goal is to fine-tune your ears and mouth, so that you become aware of what is going on when various sounds are produces. Phonetics is an important discipline because:

1. It increases your perception of how sounds are formed. It exposes you to lots of unfamiliar sounds, tones and intonations, thus subtle tuning your ears.
2. Understanding phonetics is important because it help to improve your pronunciation, the importance of which cannot be overstated. Pronunciation is the first thing the native speaker's ear will pick up. In spite of dialectical differences, all native speakers are agreed on what is acceptable—and it is often the foreigners' language which is unacceptable. Will your version of your target language be pleasant or off-putting?
3. Phonetics is a good gauge of your linguistics flexibility. Inside everyone there is an “inner boundary”. Are you prepared to break through that inner boundary? Will you reject foreign sounds? Making strange sounds makes you feel uncomfortable. We resist contorting our faces and forming our mouth into awkward positions. We try to produce the sounds of another language as “normally” as possible so as to keep from feeling silly. That resistance has to go. If you are attempting to produce an alien sound and your mouth does NOT feel uncomfortable in the process, **YOU ARE NOT SAYING IT RIGHT**. You will feel tense. Your Language Helper may tell you to relax, and when you do you'll be pronouncing sounds according to your native language! You'll be saying it wrong! In fact, the degree to which you are willing to

loosen up phonetically may be an indication to how willing you are to loosen up in the whole area of acculturation, of doing things in culturally appropriate ways.

4. Phonetics is very physical. The muscles of your mouth must make VERY PRECISE movements quickly and accurately in order to communicate. “The cross I’d bear” or “The cross-eyed bear”? (*Give Chinese example*) Think how close these two sentences sound like each other!

Fade and Cut

Scene 17.3. Teacher Zhang Dong speaking into camera. Title: Lets get to know our mouths

Teacher Zhang Dong: Human speech sounds fall into 2 categories: Consonants and Vowels. Some languages are very vowel rich. Turkish is. So is English. It has 13 different vowel sounds (SHOW ENGLISH PHONETICS CHART). Arabic, on the other hand, has only a few. It is consonant rich.

The difference between a consonants and a vowel is simple: A consonant is a speech sound in which the breath is at least partially obstructed, while a vowel is a speech sound in which the mouth is open and the tongue is not touching the top of the mouth, the teeth or the lips.

In other words, there is virtually no restriction in the flow of air with the production of vowels. They are made by manipulating the internal shape of the mouth by the position of the tongue and the shape of the lips. For instance, when English makes the vowel sound in the word “sheep” the tongue is high and to the front of the mouth. When we make the vowel sound in “boot” the tongue is low and to the back of the mouth and the lips are rounded. For the vowel sound in “pat” the tongue is low and to the front of the mouth. Maybe you noticed that, in English, vowels produced by the back of the tongue are accompanied by rounded lips and those produced by the front of the tongue are unrounded. This is not necessarily true for other languages. Accents in words fall on vowels, not on consonants.

Fade and Cut

Scene 17.4. Teacher Zhang Dong speaking into Camera

Teacher Zhang Dong: The next thing you need to know is something REALLY REALLY IMPORTANT! It is called the “manner of articulation”. Remember the difference between a vowel and a consonant? With consonants the airflow accompanying the sound is impeded. The degree of impedance and the location of that impedance in the mouth distinguishes one consonant from another. In other words, if you can figure out exactly how the other person impedes the airflow accompanying the

strange consonant you are trying to learn, you will almost certainly be able to learn to say that sound correctly.

Let me repeat that: if you can figure out exactly how the other person impedes the airflow accompanying the strange consonant you are trying to learn, you will almost certainly be able to say that sound correctly!

When speaking, different parts of your lower mouth moves near to or against different parts of your upper mouth to cause the impedance to the air stream. These moving parts of your mouth, i.e., the bits attached to your lower jaw, are called articulators. There are basically five of them: 1. the lower lip, 2. tongue tip, 3. tongue blade, 4. tongue centre, 5. tongue back.

Let's start with the simplest impedance: a complete stop. *Stops* are produced with the air stream is momentarily completely stopped. In English the sounds “p”, “b”, “t”, “d” “g” and “k” are total stop. For a brief moment the airflow is completely interrupted when you make these sounds.

Fricatives are different from stops. *Fricatives* are produced when the air stream is greatly impeded. In other words, for these sounds the airstream is not interrupted, but it is partially restricted. You are forcing the air through a smaller opening than it wants to. In English the sounds “s”, “f”, “v” and “z” are fricatives

At this point it is important to get to know your mouth. Here, look at this diagram of your head split right down the middle (show face diagram) and let me point out the different points of articulation. Those are the places where the air stream is stopped or impeded with consonants. It is the point where some part of the lower mouth touches or comes near to some part of the upper mouth.

1. **Bilabial** (two lips): sound made using the upper and lower lips (p, b, m).
2. **Labiodental** (lower lip and upper teeth): sound made using the lower lip and upper teeth (f, v).
3. **Interdental** (tongue tip between upper and lower teeth): sound made when the tongue tip is between upper and lower teeth (th, dj).
4. **Alveolar** (tongue tip at the alveolar ridge): sound made when the tongue tip is at the alveolar ridge (the “gum ridge”) (s, l, t, d, n).
5. **Palatal** (tongue mid at palate): sound made when the tongue is at the palate (s, z, y).
6. **Velar**: sound made when the back of the tongue is at or near the velum (velic) (k, g).
7. **Uvular** (uvula tip moving): sound made when the uvula tip moves (French “r”)

OK, these are the basic points of articulations. Now take a look at this chart, and we'll map various consonants on them (*Teacher Zhang Dong goes over the material step by step using the chart*).

Place of Articulation	Active Articulator	Passive Articulator
Bilabial (= 2 lips; b,p,m)	Lower lip	Upper lip
Labiodental (=tips & teeth; f, v)	Lower lip	Upper teeth
Interdental (= tongue between teeth; th, dj)	Tongue tip	Teeth
Dental (=tongue tip behind top teeth) t, but not as in English	Tongue tip	Top teeth
Alveolar (t,d,z,l,s,n,r)	Tongue tip	Alveolar ridge
Retroflexed Alveolar (common in East India; t. d)	Underside of tongue tip	Alveolar ridge
Fronted Palato-Alveolar (doesn't exist in English) S and z as in Mandarin Chinese	Tongue blade	Alveolar ridge
Palato-Alveolar (= sh as in seizure; J as in Jesus) rare in English	Tongue blade	Behind alveolar ridge
Retroflexed palato-alveolar (type of "r" and "s" not in English)	Underside of tongue blade	Alveolar ridge
Palatal (= "c" and soft "k")	Tongue center	Palate
Velar (= g and k")	Tongue back	Velum
Uvular High Dutch "r"	Tongue back	Uvula
Pharyngeal ? in Arabic	Tongue back	Pharyngeal wall
Glottal Glottal stops	Vocal chords	No passive

Mispronunciation takes place when sounds sound similar but are actually made in different parts of the mouth. As you can see, for instance, English has a lot of alveolar letters. Many other languages, however, don't make all these letters, the t,d,z,l,s,n, and r with the tongue tip against the alveolar ridge. They make all or some of these letter with the tip of the tongue against the backs of the upper teeth. In other words, in these languages these are dental, not alveolar sounds. When a native English speaker then speaks one of these languages, he will always sound funny, because he puts the tip of his tongue against his alveolar ridge, as in English, instead of against his upper teeth as he is supposed to! As a result he will always sound like a silly foreigner! And that is something you want to avoid!

Fade and Cut

Scene 17.5. Teacher Zhang Dong speaking into camera. Title: Features of sound identification

Teacher Zhang Dong: It is possible to produce several sounds at the same point of articulation. For instance, p, b, and m, are all produced at the lips. All three are bilabial. The thing that distinguishes the “p” and the “b” is not the shape of the mouth. They are exactly the same in both cases. There are a number of other factors that cause sounds to differ from each other. When you are trying to identify how a particular sound is made there are a number of things you need to pay attention to.

1. Air Mechanism: When identifying sounds you need to know where the air originates from and what direction it is moving in.

Normally the air you exhale as you make a sound originates in the lungs. Some languages, however, make a few sounds with the air coming from the larynx (the cavity behind the nose and mouth connecting it to the oesophagus) or the mouth without drawing from the lungs (*I think there may be a Chinese sound “hu” that is made that way, but I’m not sure*)

In English, speech sounds are made by pushing air out of the lungs through the mouth or sometimes through the nose. Because it is pushed out it is called egressive. In some languages the air is sucked into the mouth. These are called ingressive sounds. Some African languages have the air originate at the velar to produce “clicks”, clicking sounds at the back of the throat.

2. The second thing to be on the lookout for is the state of your vocal chords. Is the sound voiced or unvoiced? What do we mean by that?

Well, as the air is expelled from the lungs it can either cause the vocal cords to vibrate or not to vibrate. If the vocal cords vibrate, a voiced sound is produced, if they do not vibrate a voiceless sound is produced. Put your hand on your own throat—go ahead and do it, just like this—and say “mmm”. Do you feel vibration in your throat? You should, because “mmm” is a voiced sound. Keep your hand on your throat and say, “ssss”. You shouldn’t feel any vibration in your throat, because with the “ssss” sound we don’t use our vocal chords. It is called voiceless sounds. In other words, voiceless speech sounds occur when the airstream does not cause the vocal cords to vibrate.

Say the following sounds with your hand on your throat and try to identify which are voiced and which are the voiceless sounds (*Show these letters: p b m t k s z f v g*). Turn the voicing on and off without stopping the flow of air. Here, we’ll do it together:

fffffvvvv

vvvvvfffff

pppppbbbbb

bbbbbbppppp

hahahaha
SZ, ZS

hahafvfv
ZSZS, SZSZ

fvfvfvfvfv

~~pppppppppp~~

3. The third thing to ask yourself is whether a sound is nasal or not. We call some sounds nasal because air is allowed to pass through the nasal passage. In other words, when air escapes through the nose instead of the mouth a nasal sound is produced. In English the sounds “m” and “n” are nasal.

Try saying these sounds with your nose pinched shut (He tried to demonstrate). Look, you cannot say them on going with your nose pinched shut, because the air coming through your nose has no place to go!

4. The fourth thing to ask yourself is if a sound is aspirated or not. What does aspiration mean? Look. I’m going to put a piece of paper in front of my mouth as I say the following English words: “pan”, “tin”, and “kin”.

Do you see the paper blow after the letters “p”, “t”, and “k”? In English a little puff of air accompanies these letters. When a little puff of air accompanies a letter, it is called “aspiration”.

Now look again. I’m going to put the paper in front of my mouth and say “span”, “stone”, “skin”.

What happened? Nothing, right? That’s because in English there is no aspiration when “p”, “t”, and “k” come after “s”.

Generally in English we aspirate voiceless stops at the beginning and in the middle of words. We MAY aspirate a voiceless stop at the end of a word if it is spoken very slowly, or in isolation and thus requires aspiration in the phonetic symbolization.

This is not necessarily the case in other languages!

Fade and Cut

Scene 17.6. Teacher Zhang Dong: Title: Contrast and Suspect Sounds

Teacher Zhang Dong: Contrast occurs when we find two words similar in sound like pill and bill but which have different meanings. The difference in the sounds “p” and “b” amount to a minor difference in the manner of articulation. They are both stops. Both are made with the lips but one, p, is voiceless while b is voiced.

feel > veal f & v are contrasting sounds in English, not in Arabic.
v and b are contrasting sounds in English, not in Spanish.

The p and the b are non-contrasting sounds in other languages (Arabic)

So, contrast occurs when two related sound which share common features, and which, when we exchange them results in a change in meaning.

Fade and Cut

Scene 17.7. Missionary Li Wei talking into the camera

Missionary Li Wei: Let me give you some tips for when you are trying to identify and replicate strange sounds. Remember, you have to hear it correctly before you can say it correctly! So...

1. Pick out the sounds that are hardest for you and set up drills to work on them. Get words where those sounds occurs (if possible) at the beginning, middle and end of words.
2. One way to pick out sounds that you find difficult are to get your language helper to make recordings reading children's stories slowly and with feeling and drama. This kind of dynamic speaking highlights sounds. After that make tape recordings of yourself so you can hear yourself. You need to be able to compare your pronunciation with that of your Language Helper.
3. Force yourself to watch you Language Helper's mouth. Get close! How far does his tongue come forward, how rounded are his lips?
4. Use a mirror to try to form your mouth just like your Language Helper. You will be surprised at how different your mouth will be shaped from his. English, for instance, is lip lazy. They glide into their vowels. Languages with pure vowels form the vowel shape before pronouncing it.
5. Don't let the way a language is written control the way you say it. Remember, English, for instance, has only 26 letters in its alphabet but some 44 sounds! In other words, many letters represent more than one sound!
6. You must develop an "internal language monitor" (a bit like a conscience). It is like putting on headphones and tuning in whenever you open your mouth so you can pick up mispronunciations (and bad grammar too) "No, let me say that again". People with poor pronunciation have poor internal monitors. Self correction is the way forward.

Fade and Cut

Scene 17.8. Things learned in this lesson:

- Getting good pronunciation is very important! Pronunciation is the first thing the native speaker's ear will pick up.
- Because the muscles in your mouth have "locked into" you mother tongue, it now takes conscious effort to retrain your ears and mouth muscles.
- In phonetics you fine-tune your ears and mouth to reproduce foreign sounds

- If you are not feeling uncomfortable when trying to say a foreign sound you are not saying it right.
- A consonant is a speech sound in which the breath is partly or completely obstructed
- If you can figure out how the other person impedes their airflow and replicate that, you will be almost certain to learn to say that consonant correctly. In other words, if you can recognize and replicate the points of articulation, your accent will improve greatly!
- Voicing is when your vocal chords are vibrating when you make a sound.
- Voiceless sounds are made without vibrating the vocal chords.
- Fricative sounds force air through a narrow passage created somewhere in the mouth or throat.
- Nasal sounds direct air through the nasal passage.
- Aspiration is a little puff of air that accompanies a sound.
- Lateral sounds, or “l’s”, direct air around the sides of the tongue.
- In vowels there is virtually no restriction of the flow of air.
- Accents tend to fall on vowels.
- Contrast occurs when two sounds share common features, but when you exchange them it results in a change in word meaning.
- Mispronunciation takes place when sounds sound similar but are actually made in different parts of the mouth.