Language Documentation Training Center

Session 3: **Minimal Pairs**

What are minimal pairs?

Say the two words in each row. What difference do you hear between the two words?

bat	pat
bad	bat
bid	bad
pit	bit

Each set of words varies by only one sound. Words with different meanings that vary by only one sound are called **minimal pairs**. The varying sound can be either a consonant or a vowel. As these examples show, minimal pairs can be formed with a sound change either at the beginning, middle or end of the word.

Word initial minimal pairs

p / b	**p**ark	**b**ark
t / d	**t**o	**d**o
k / g	**k**ill	**g**ill
m / n	**m**ight	**n**ight
s / z	**s**ue	**z**oo
f / v	**f**airy	**v**ery
th / th	**th**igh	**th**y
ch / j	**ch**ill	**J**ill
l / r	**l**ot	**r**ot
w / y	**w**et	**y**et

Sometimes the same sound can be spelled differently in different words. The sound is important, not its spelling.

The International Phonetic Alphabet (IPA)

As you work with your mentor, they will try to match the sounds of your language to symbols of the International Phonetic Alphabet, also known as the **IPA**. For this project you do not need to learn all of the IPA symbols, however it will be helpful if you become familiar with those of your language.

Here are some examples of a few unfamiliar symbols used for common sounds in English. Your language may or may not have these sounds.

1. /ŋ/ The *ng* sound in “king” and “song”
2. /ʔ/ The ‘okina (apostrophe) in “Hawai'i”
3. /ʃ/ The *sh* sound in “shy” and “ash”
4. /θ/ The *th* sound in “thigh”, “three”, and “thank”
5. /ð/ The *th* sound in “these”, “brother”, and “they”

6. /tʃ/ The *ch* sound in “cheese”, ‘cheap”, and “Dutch”
7. /dʒ/ The sound of *j* in “jump”, “juice”; the sound of *g* in “giraffe”; or the sound of *dg* in “bridge”

If you need help identifying a sound, try using these online recordings of IPA sounds.

http://hctv.humnet.ucla.edu/departments/linguistics/VowelsandConsonants/course/chapter1/chapter1.html

Word final minimal pairs

p / b	co**p**	co**b**	
t / d	a**t**	a**dd**	
k / g	tu**ck**	tu**g**	
m / n / ng	su**m**	su**n**	su**ng**
s / z	bu**s**	bu**zz**	
f / v	sa**f**e	sa**v**e	
ch / j	bat**ch**	ba**dg**e	
l / r	hee**l**	hea**r**	

Look at the word “badge”. Its final sound does not correspond to the last letter of the word. Do not focus on spelling, the sound is most important.

Word medial minimal pairs

p / b	sim**p**le	sym**b**ol	
t / d	aun**t**y	An**d**y	
k / g	bi**ck**er	bi**gg**er	
m / n	si**mm**er	si**nn**er	si**ng**er
s / z	ra**c**er	ra**z**or	
f / v	re**f**use	re**v**iews	
ch / j	ri**ch**es	ri**dg**es	

So far we have only looked at contrasts in consonants sounds. With minimal pairs we can also identify the different vowels of your language. Look at the following words. The difference between the words is the vowel. Sometimes one vowel sound is represented by more than one letter. The last example, ‘bought’ shows us again that we must listen to the sound of the word and not be influenced by the spelling.

‘b**ee**t’ ‘b**i**t’ ‘b**e**t’ ‘b**ai**t’ ‘b**a**t’ ‘b**u**t’ ‘b**oa**t’ ‘b**ou**ght’ ‘b**oo**t’

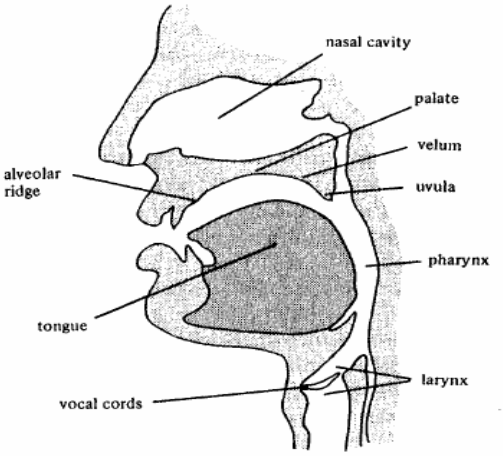
How to distinguish contrastive sounds (phonemic sounds)

1. Place of articulation

First, we need to be aware of where each sound is produced in the mouth and see if any other contrastive sounds are made at the same place.

Consonants:

Many sounds involve moving the tongue to touch part of the roof of the mouth. Linguists have divided the roof of the mouth into various sections and classify each sound based which section of the roof the tongue touches. This diagram shows where some of those places are located.



Vowels:

They are somewhat more tricky, but here are some vowels which appear in English.

	Front	*Central*	*Back*
High	i *beat*		u *boot*
Mid	e *bait**	ə *the*	o *boat**
	ɛ *bet*		ɔ *ball*
Low	æ *bat*		
	a		ɑ *father*

The high vowels are created closer to the roof of the mouth and the low are created with the mouth more open.

*English uses diphthongs instead of /e/ and /o/

Your language may have fewer or more vowels than those shown this diagram.

2. Voicing

Put your hand on your throat, try to pronounce a long *s*. Now do the same thing and say *z*. What's the difference?

The vibration which you feel for *z* is called **voicing**, caused by the vibration of the vocal cords. The z is called a **voiced** sound, and s is called a **voiceless** sound.

Consonants often contrast in voicing. Vowels may also contrast in voicing although this is not common.

3. Aspiration

Try to put your palm in front of your mouth, and say these words. *pie* s*py*

The puff of air that you feel when you say 'pie' is called **aspiration**. The /p/ in 'spy' is acoustically a different sound from the /p/ in 'pie' (there is no puff of air in *spy*), yet English speakers classify them as a same sound. In English they are not contrastive. Failure to aspirate the /p/ in 'pie' will not change the meaning of the word. In your language aspiration may be a contrastive feature. This contrast only occurs with a small set of consonants.

4. Length

Occasionally the length of a sound is contrastive. When a vowel is lengthened, linguists often use **:** after the vowel to mark the longer vowel.

- Hawaiian ‘aina [ʔaina] ‘meal’ ‘āina [ʔa:ina] ‘land’

When a consonant is lengthened linguists write the sound with a double consonant.

- Japanese haka 'grave' hakka 'mint'

5. Tone /Accent

- Mandarin Chinese mā 'mother' má 'hemp' mǎ 'horse' mà 'scold'
- Japanese áme ‾ ‾ 'rain' amé ‾ ‾ 'candy'

Your Turn

Try to find 15 minimal pairs in your language. Use place of articulation, voicing, aspiration, length, and tone/accent to help you.

After identifying contrastive sounds like the voiceless/voiced *p* and *b* in English, look for the same contrast at the beginning of one pair, in the middle of another pair and at the end of a third pair, for example:

p / b **p**ark / **b**ark co**p** / co**b** rum**p**le/ rum**b**le