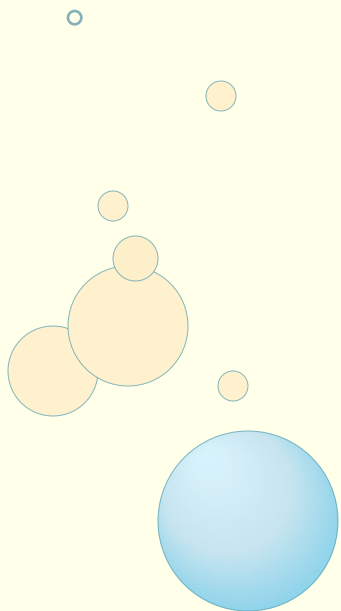




# English Consonants

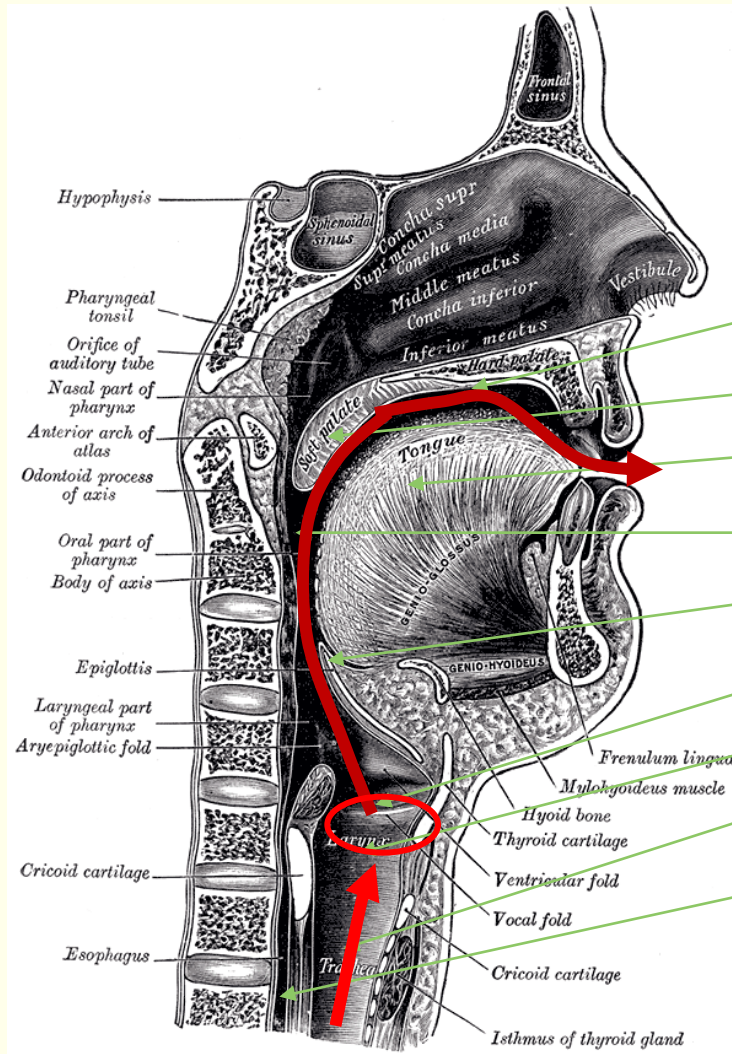
Ching Kang Liu  
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<http://web.ntpu.edu.tw/~ckliu/pronunciation/pronunciation.htm>



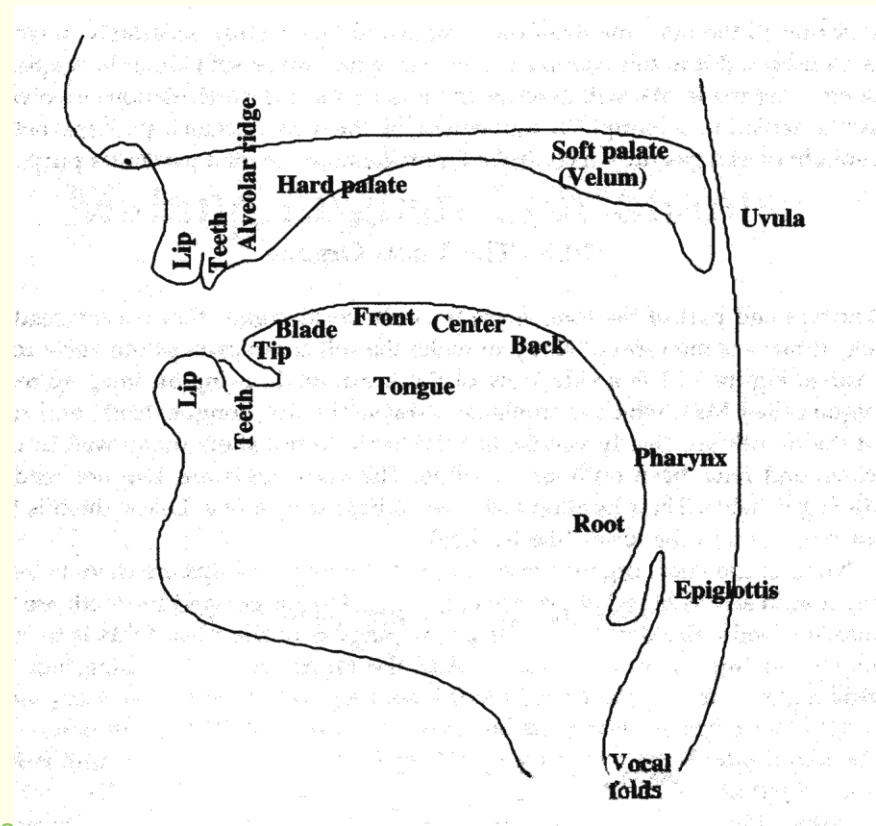
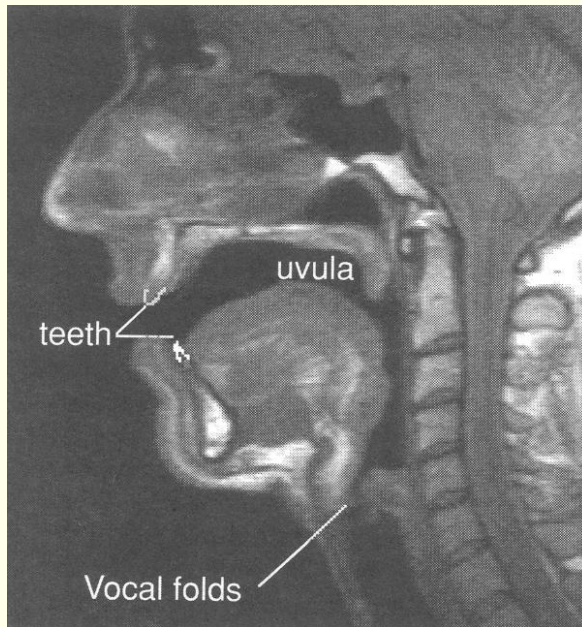
# Overview

## Articulation positions of consonants



Hard palate  
Soft palate  
Tongue  
Oral part of pharynx  
Epiglottis  
Vocal fold  
Larynx  
Trachea  
Esophagus

## Positions



### (1) Vocal folds

<http://www.humnet.ucla.edu/humnet/linguistics/racini/demos/vocaloids/vocaloids.html>

<http://www.voicedoctor.net/media/video/female.html>

<http://www.sci.mus.mn.us/sound/vrml/vocal/vocalcu.htm>

### (2) A voyage to the vocal organs (a movie)

<http://www.ncvs.org/ncvs/tutorials/youngexp/fantasticvoyage.html> (RealPlayer is needed)

## The X-ray video

(The X-ray video,  
provided by  
Ladefoged, UCLA)

həpɛ	hətɛ	həkɛ
həpɑ	hətɑ	həkɑ
hədɛ	hənɛ	həsɛ
həzɛ	həsɑ	
hɛp	hɛt	hɛk
hɑp	hɑt	hɑk
həti	həti	hətæ
hətu	hətu	
hətɛt	hətɑt	hətɛk
həpɛn	hidi	hida
higi	higa	ia

Why did Ken put the soggy net on  
top of his desk?

I have put blood on her two clean  
yellow shoes.

# Overview

## Contrasting the English & Mandarin consonants

Catagories	English	Mandarin	Notes
Phonemic structures	V I CV be CCV ski CVC kid CCVC skip CCVCC slept CCCVCCC stretch	V (y)i CV li CVC(/n/ or /ŋ/) lin; ling	mismatch
Bilabial	/p//b/	/p//b/	
Labiodental	/f//v/	/f/	mismatch
Dental	/θ//ð/		mismatch
Dental-alveolar		/ts//tz/; /t//d/; /s//z/	mismatch
Alveolar	/t//d/; /s//z/;		mismatch
Palatal	/ʃ//ʒ/; /tʃ//dʒ/		mismatch
		/ɕ//ç/; /tɕ//dʑ/	
Velar	/k//g/	/k//g/	
Glotal	/h/	/h/	
Nasal	/m//n//ŋ/	/m//n//ŋ/	
Lateral	/l//ɭ//r/	/l/	
		/əɾ/	mismatch
Approximant	/w//j/		mismatch

# Overview

## Manners and positions of English consonants

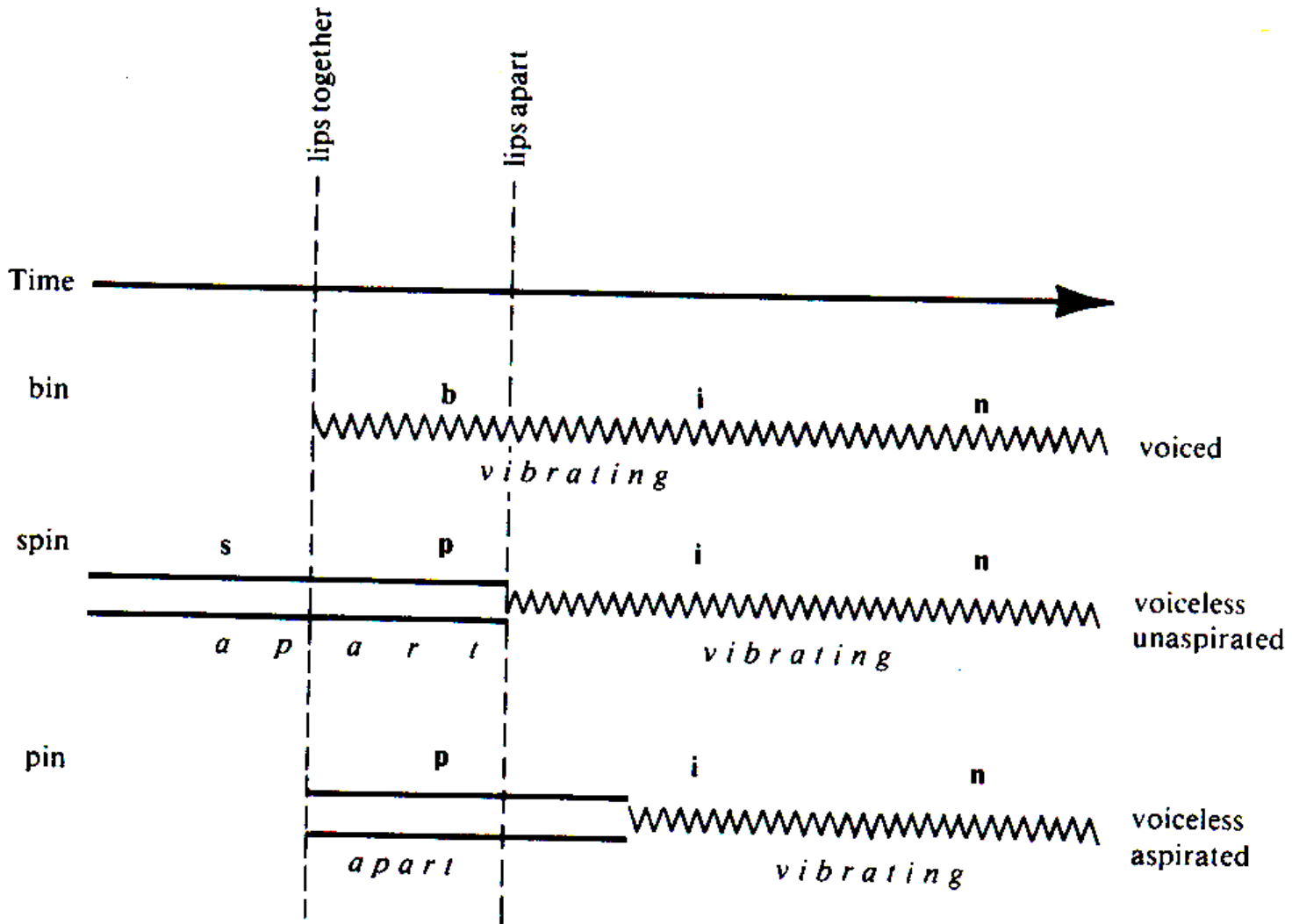
Manners of Articulation	Place of Articulation						
	Bilabial	Labiodental	Dental	Alveolar	Palatal	Velar	Glottal
Stop							
Voiceless	/p/			/t/		/k/	
Voiced	/b/			/d/		/g/	
Fricatives							
Voiceless		/f/	/θ/	/s/	/ʃ/		/h/
Voiced		/v/	/ð/	/z/	/ʒ/		
Affricate							
Voiceless					/tʃ/		
Voiced					/dʒ/		
Nasal-voiced	/m/			/n/		/ŋ/	
Liquid-voiced				/l/	/r/	[ɾ]	
Glide/Approximant							
Voiceless	/hw/						
Voiced	/w/				/j/		

# Overview

## Manners and positions of English consonants

Manners of Articulation		Place of Articulation						
		Bilabial	Labiodental	Dental	Alveolar	Palatal	Velar	Glottal
Stop 塞音	Voiceless	/p/ ㄆ			/t/ ㄊ		/k/ ㄎ	
	Voiced	/b/ ㄇ			/d/ ㄌ		/g/ ㄍ	
Fricatives 擦音	Voiceless		/f/ ㄈ	/θ/ ㄊ	/s/ ㄙ ㄷ	/ʃ/ ㄕ		/h/ ㄏ
	Voiced		/v/ ㄎ	/ð/ ㄌ	/z/ ㄌ	/ʒ/ ㄕ		
Affricate 塞擦音	Voiceless				ㄊㄌ	/tʃ/ ㄕ		
	Voiced				ㄌㄌ	/dʒ/ ㄕ		
Nasal- 鼻音	Voiced	/m/ ㄇ			/n/ ㄋ ㄌ		/ŋ/ ㄍ	
Liquid- 側音	Voiced				/l/ ㄌ	/r/ ㄕ	[ɹ]	
Approximant 滑音/半母音	Voiceless	/hw/					/hw/	
	Voiced	/w/ ㄨ				/j/ ㄣ	/w/ ㄨ	

## Aspirated and unaspirated sounds



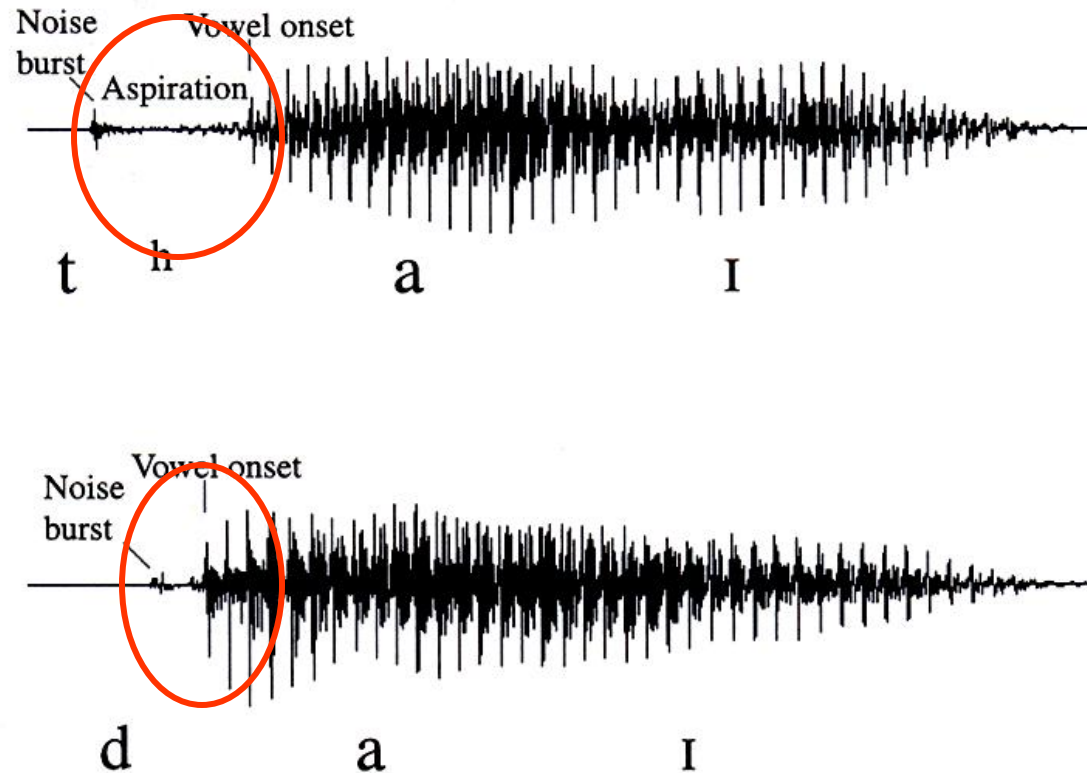


## Aspirated and unaspirated sounds

**Aspiration** is a period of **voicelessness** after the stop articulation and before the start of the voicing for the vowel. If you put a sheet of thin paper in front of your lips while saying “pie,” you can feel the burst of air that comes out during the period of voicelessness after the release of the stop.

In a narrow transcription, aspiration may be indicated by a small **raised *h***, [<sup>h</sup>]. Accordingly, these words may be transcribed as [ p<sup>h</sup>aɪ, t<sup>h</sup> aɪ, k<sup>h</sup> aɪ ]. You may not be able to feel the burst of air in “tie, kye” because these stop closures are made well inside the mouth cavity.

# Aspirated and unaspirated sounds

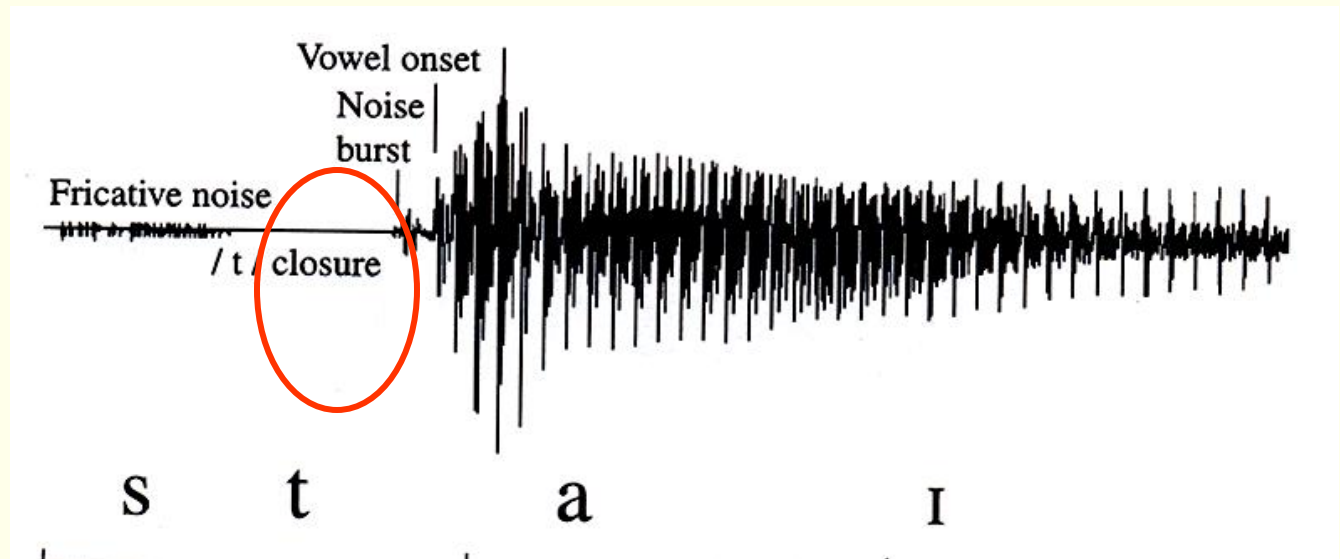
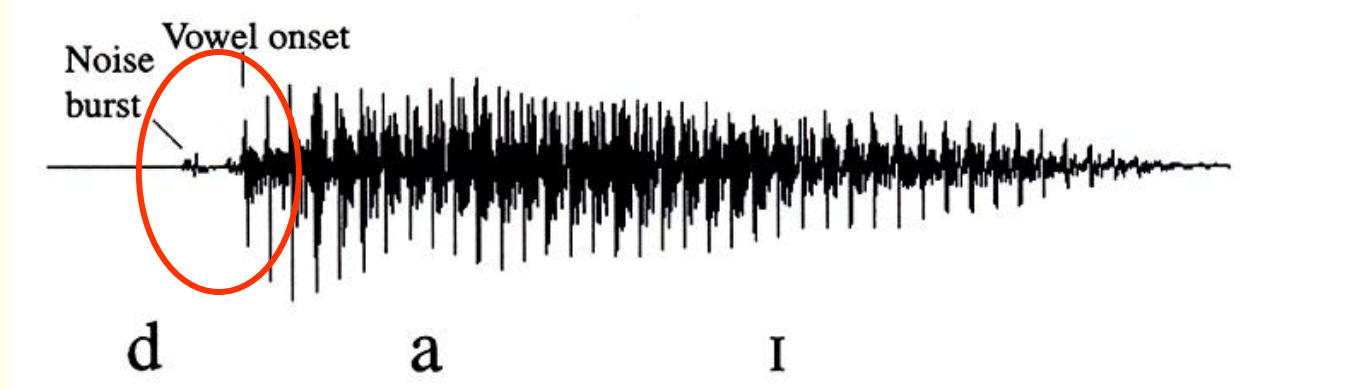


Try the following set of sounds and examine the VOT (vowel onset time):  
tie sty die      pie spy buy      key ski geesey

# Voiced & Voiceless










## When /s/ is clustered with /t/, /k/, and /p/

1. If the stop consonant is voiceless, there will be a period of “aspiration” before the VOT.
2. If the stop consonant is voiced, there will not be a period of “aspiration” before the VOT.



# Deviating Sounds

## Possible deviating consonant sounds

	English sounds	Examples	Deviating sounds	Examples	Solutions
	add coda	big; book, etc.	/-ə/	bi <b>G</b> ; boo <b>K</b>	<b>Direct methods:</b> audio-visual aids as well as face-to-face instruction  <b>Phonetic approaches:</b> 1. To slow down when showing the learners the articulation positions; 2. To provide clear examples and make sure the learners comprehend the instruction.
	/kl/	clear	/kəɪ/	*calear	
	/pl/	please; play	/pəɪ/	police(?); *palay	
	/bl/	blue	/bəɪ/	*balue	
	/sp/	spy	/sp <sup>h</sup> /	spy	
	/st/	stay	/st <sup>h</sup> /	stay	
	/sk/	sky	/sk <sup>h</sup> /	sky	
	del coda	United States questions		*Uni?-States ques?ion	
	/m/	him; problem	/n/	*hin; *problen	
	/n/	country	/m/	*comtry	
	/ŋ/	going	/n/	goin	
	/t/	deal	/r/	dear	
	/r/	room	/l/	loom	
	/l/	world		word	

## Possible deviating consonant sounds



English sounds	Examples	Deviating sounds	Examples	Solutions
/v/	seven	/b/	*seben	<b>Direct methods:</b> audio-visual aids as well as face-to-face instruction  <b>Phonetic approaches:</b> 1. To slow down when showing the learners the articulation positions; 2. To provide clear examples and make sure the learners comprehend the instruction.
/θ/	think	/s/	sink	
/ð/	they	/d/	lay; day	
/ʃ/	shake	/s/	sake	
/ʒ/	pleasure	/dʒ/	pledger	
/tʃ/	watch	/ts/	*wats(y)	
/z/	zoo	/dz/	*dzu	

(1)

Voiceless stops /p, t, k/ are **aspirated** when they are syllable **initial**.

Examples

pip, test, kick  
[p<sup>h</sup><sub>I</sub>p, t<sup>h</sup><sub>ε</sub>st, k<sup>h</sup><sub>I</sub>k].

(2)

Voiceless stops /p, t, k/ are unaspirated if immediately preceded by an /s/.

Examples

spew, stew, skew

(3)

**Stops are unexploded** when they occur **before another stop** in words such as

Examples

apt

[æp̚t]

rubbed

[rʌb̚d]



(4)

In many accents of English, syllable final /p, t, k/ are accompanied by a **glottal stop**.

Examples

tip,    pit,    kick

[tɪ<sup>ʔ</sup>p,    pɪ<sup>ʔ</sup>t,    kɪ<sup>ʔ</sup>k]

(5)

In many accents of English, /t/ is replaced by a glottal stop [ʔ] when it occurs before **an alveolar nasal** [ɲ] in the same word.

Examples

beaten

[ˈbiʔɲ]

(6)

**Nasals** are **syllabic** at the end of a word when immediately after an obstruent (/p, t, k, tʃ, f, θ, s, ʃ/ and /b, d, g, dʒ, v, ð, z, ʒ/).

Examples

lead**en**,

['lɛ**d**<sub>ɪ</sub>]

chas**m**

['kæ**z**<sub>m</sub>]

(7)

The lateral /l, r/ are syllabic at the end of a word when immediately after a consonant.

Examples

paddle,	whistle
['pædl̩],	['wɪsl̩]

sabre,	razor,	hammer,	tailor
['seɪbr̩]	['reɪzr̩]	[hæm̩r̩]	[teɪl̩r̩]

(8)

Alveolar stops (/t, d, n/) become **voiced taps** [ɾ] when they occur between two vowels with the **second of which unstressed**.

Examples

winter

winner

panting

panning

(9)

Alveolar stops are reduced or omitted when between two consonants.

Examples

most people

['mous 'pɪpəl] or ['moust 'pɪpəl]

best game

(10)

A consonant is shortened when it is before an identical consonant.

Examples

bi**g** game, to**p** post

stray tissue, straight issue, straight tissue

(11)

Velar stops become more front as the following vowel in the same syllable becomes more front.

Examples

/k/ in "cap, kept, kit, key"

[kæp, kɛpt, kɪt, ki]

/g/ in "gap, get, give, geese"

[gæp, gɛt, gɪv, gis].



(12)

The lateral /l/ is **velarized** when after a vowel or before a consonant at the end of a word.

Examples

life      file

[laɪf]   [faɪɫ]

clap      talc

[klæp]   [tæɫk]

feeling

[fiɪlɪŋ]

feel

[fiɫ]

# Real consonants in different Phonological environments

## How to read English alphabet letters



/i/	B, C, D, E, G, P, T, V, Z
/ɛ/	F, L, M, N, S, X, (Z)
/e/	A, H, J, K
/ju/	Q, U, W
/aɪ/	I, Y
/o/	O
/ɑ/	R

<http://web.ntpu.edu.tw/~language/sound/sound.htm>  
<http://web.ntpu.edu.tw/~ckliu/pronunciation/pronunciationold.htm>



/m/ make famous damage name the same time

### Sentences



1. They have a problem with our new computer system.
2. They have the same name, and that's the problem.



1. /θ/ thing think nothing author math fifth



2. /ð/ that there together other smooth breathe

3. Sentences:



- a. I'm so **th**irsty.
- b. **Th**at was **th**ree days ago.
- c. **Th**e test is on **Th**ursday.
- d. He grew up in the **southwest**.
- e. I'm sorry. I have som**eth**ing else to do right now.

# Practice

## Fricatives /s/ and /z/

1. /s/

2. /z/

3. Read the following pairs:




- |    |                    |         |
|----|--------------------|---------|
| 1. | a. sip             | b. zip  |
| 2. | a. Sue             | b. zoo  |
| 3. | a. seal            | b. zeal |
| 4. | a. pricesb. prizes |         |

4. More pairs




- |    |       |       |
|----|-------|-------|
| a. | think | sink  |
| b. | math  | mass  |
| c. | truce | truth |


 1. /ʃ/ she short machine washing foolish crash

 2. /ʒ/ vision occasion television pleasure treasure

3. Sentences:

-  a. Please pass the sugar.  
b. The tickets should come in the mail.  
c. I'll have to rush to finish before the deadline.  
e. She's fluent in English and Spanish.

4. Sentences:

-  1. I usually dress casually on this kind of occasion.  
2. It's a great pleasure to share the treasure with you.

# Practice

## Affricates /tʃ/ and /dʒ/



1. /tʃ/ chair children church watch TV lunchtime



2. /dʒ/ judge college education a large package



3. Read the following pairs:






- |          |       |             |         |
|----------|-------|-------------|---------|
| a. sheet | seat  | f. shift    | sift    |
| b. shoe  | chew  | g. shore    | chore   |
| c. see   | she   | h. watching | washing |
| d. sheet | cheat | g. sour     | shower  |
| e. chop  | shop  | h. catch    | cash    |

# Practice


## Liquids /r/ and /l/; /-r/ and /t/

-  1. /-r/ her beer year share four car  
 2. /t/ fill well whole meanwhile natural result

3. Read the following pairs:

-  a. /r/ & /l/ lead read erect elect right light  
 b. /-r/ & /t/ here heel halt heart stale stare  
 c. /a/ & /ar/ pot part sharp shop

4. Read the following expressions:

-  1. a little bit 5. old people  
2. in the middle 6. a helpful article  
3. in a little while 7. in trouble  
4. on the whole 8. a logical result



# Practice

## Approximants/glides /w/ and /j/

1. /w/ we wet word work language quick
2. /j/ yellow yell year jam yard use

Sentences:

1. We acquired our first language when we were children.
2. We will have to work hard to clear this wood.



1. /st-/ stop storm strong start stay



2. /sp-/ spring spend speak split



3. /sk-/ skin scream squeeze

4. Sentences:



a. The stone steps lead straight to the stream.

b. Would you rather ski or skate or just be a spectator?

# Practice

## When /t/ and /d/ followed by /ŋ/



1. /dŋ/ sudden hidden garden didn't couldn't



2. /tŋ/ cotton written button eaten mountain

Read the following sentence:



I paid that money back to you, didn't I? I hope I didn't forget!

# Practice

When /b/, /k/, /g/ & /p/ are followed by /l/ or /r/



1. /bl/ bleed bless black blue blood



2. /cl/ clear clean clever clock clothe



3. /gl/ glad glasses glow glory glue



4. /pl/ please play pleasure plan apply

Sentences:



1. I'm glad to see that my block is still clean.
2. Let's clean the wall and clear the path.

# Practice

## When /r/ is followed by /l/



1. /-rl/   world   girl   curl   Earl   pearl  
word

2. Read the following expressions:



the best in the world  
girl' dormitory  
pearl necklace  
curly hair

1. Progressive assimilation

look looks

love loves

like liked

love loved

2. Regressive assimilation

input have to


3. complete assimilation

cupboard

4. Coalescent assimilation

this year; would you...; set you up

## When “s” and “es” are suffixes (sibilants)

- 
1. a **rose** /z/                      two **roses** /ro-zəz/ or /ro-zɪz/
  2. **Josh** /ʃ/                        **Josh's** brother /dʒɔ-ʃəz/
  3. The **judge** /dʒ/                the **judge's** decision /dʒə-dʒəz/
  4. they **watch** TV /tʃ/            he **watches** TV /wa-tʃəz/
  5. the **boss** /s/                    The **boss's** been here /bɔ-səz/.

Try to read the following expression:

Someone else's book

## When “s” and “es” are suffixes (non-sibilants)

1. When voiceless consonants are followed by “s” or “es”



a ship /p/

they visit /t/

Dick /k/

clock /k/

two ships /ps/

he visits /ts/

Dick's house /ks/

The clock's broken /ks/.

2. When voiced consonants are followed by “s” or “es”



a job /b/

Sam /m/

Buy the book /bay/.

He /hiy/

good jobs /bz/

Sam's friend /mz/

He buys books /bayz/.

He's here /hiyz/.

3. When /s/ is clustered with other sibilants:



one month





the earth

two months

the earth's circumference



## When “d” and “ed” are suffixes after /d/ or /t/

1.  construct constructed (after /t/)  
decide decided (after /d/)  
graduate graduated (after /t/)
2.  install installed  
save saved  
delay delayed
3.  talk talked  
laugh laughed  
process processed
4. Read the following expressions:  

  - a. He filled out the application
  - b. I checked in this morning.

## When fricatives are followed by /j/



p <sub>1</sub>	p <sub>2</sub>	p <sub>3</sub>	Examples
/s/	<b>/j/</b>	ʃ	this <b>red</b> year miss <b>ss</b> you
/z/		ʒ	How is <b>red</b> your day? He loves <b>ss</b> you.
/t/ or /ts/		/tʃ /	next <b>t</b> year last <b>t</b> year Who set <b>t</b> you up? That's <b>ss</b> your problem.
/d/ or /dz/		/dʒ /	Did <b>d</b> you do that? What would <b>d</b> you do? My dad's <b>ss</b> your partner.

- 1. In the near future
- 2. The next century
- 3. I assure you
- 4. blood pressure
- 5. a precise measurement
- 6. Leisure-time activities
- 7. individual rights
- 8. A recent graduate

1. Loss of /h/ sound  
ask him  
did he
2. Loss of /ə/ sound  
tell them  
something
3. Loss of /t/ or /d/ before /ən/  
sudden  
sentences
4. Loss of a syllable  
family                      temperature  
camera                      potato...

# English with different accents



Good evening, ladies and gentleman, and welcome. I'm sure we have all heard the expression, "Think Green." Tonight we are going to talk about ways that we can "Act Green" in our everyday lives.



The best place to start, of course, is in the home. Every day, people all over the world are hurting the environment without even knowing it. For example, busy families buy paper napkins and plastic food wrap at the supermarket. This helps them save time on housework, but after these things have been used, what happens to them? They go in the trash. In many places, especially in North America, big cities are running out of places to throw their trash. What can we do about this before it is too late?

American English



British English



Australian English



South African English



New Zealand English



Irish English



Saint Kitts



NTPU



The End

Of the consonant section

  
**Thank you!**