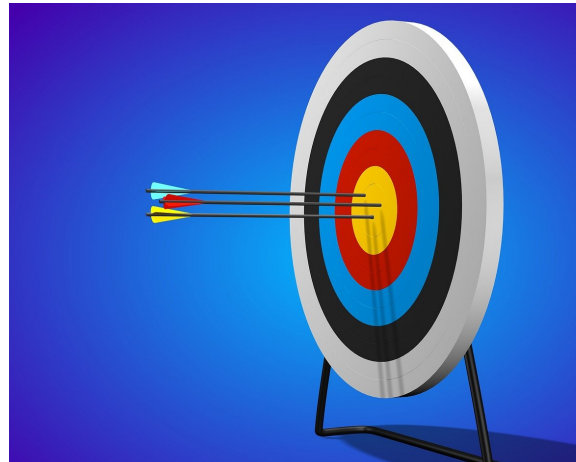


CET Pronunciation Workshops 2022

**English vowels:
From “Counting on luck”
to “Spot On”!**

英語母音：
從「碰運氣」到「百發百中」！



Karen Chung 史嘉琳
台大外文系 副教授

Read these articles!

- 大師開講 — 提升聽力祕訣：每天請聽「回音」十分鐘
(上、下)
<http://homepage.ntu.edu.tw/~karchung/pubs/CET6970.pdf>
- 英語島 23:「每天做一點」來改變人生
<https://homepage.ntu.edu.tw/~karchung/EI23everyday.pdf>
- 大師開講 — 提升聽力祕訣：/i/ 和 /ɪ/ 的辨別
<https://homepage.ntu.edu.tw/~karchung/pubs/CET71.pdf>
- 大師開講 — 台式英語罪魁禍首：/æ/, /ɛ/ 和 /eɪ/
<https://homepage.ntu.edu.tw/~karchung/pubs/CET79.pdf>

More helpful articles!

- 英語島21: 為什麼簡單的單字，發音卻不簡單？
<https://homepage.ntu.edu.tw/~karchung/EI47phonics.pdf>
- 英語島 24. 台灣味學習法：用注音練英文母音
<https://homepage.ntu.edu.tw/~karchung/EI49zhuyin.pdf>
- 英語島 10. 你有沒有不小心 講出「限制級英文」？
<https://homepage.ntu.edu.tw/~karchung/EI35rratedEnglish.pdf>
- 英語島 27. 放輕鬆，「發呆」讓你發音更好
<https://homepage.ntu.edu.tw/~karchung/EI52schwa.pdf>
- 語言交換必看小撇步
<https://homepage.ntu.edu.tw/~karchung/EI45langexchange.pdf>

如何用「回音法」學好英文口說 | 史嘉琳 Karen Chung | TEDxNTUST



如何用「回音法」學好英文口說 | 史嘉琳 Karen Chung | TEDxNTUST

<https://www.youtube.com/watch?v=sQEWEPIHLzQ&t=41s>

Is getting the vowels right “**less important**” than for consonants, as one commenter wrote under this video?



<https://www.youtube.com/watch?v=sQEWEPIHLzQ&t=41s>

What is a “**vowel**”?

What is the biggest **articulatory difference** between the sounds in Set A and Set B?

A

ㄅ、ㄆ、ㄇ、ㄋ
ㄌ、ㄍ、ㄎ、ㄏ
ㄏ、ㄏ、ㄏ
ㄌ、ㄌ、ㄌ
ㄌ、ㄌ、ㄌ、ㄌ
ㄌ、ㄌ、ㄌ

B

ㄅ、ㄆ、ㄇ、ㄋ
ㄌ、ㄌ、ㄌ、ㄌ
ㄌ、ㄌ、ㄌ

Consonants: Something **obstructs**
the airflow from the lungs

Vowels: The airflow is **unobstructed**

A

ㄅ、ㄆ、ㄇ、ㄊ
ㄋ、ㄌ、ㄍ、ㄎ
ㄏ、ㄗ、ㄘ
ㄣ、ㄨ、ㄛ、ㄜ
ㄝ、ㄟ、ㄠ、ㄡ
ㄢ、ㄣ、ㄤ

B

ㄩ、ㄚ、ㄛ、ㄜ
ㄝ、ㄟ、ㄠ、ㄡ
ㄢ、ㄣ、ㄤ

Many consonants are **noisy**

- Certain consonants are **not** like singing, that is, they are **noisy**.
- These include the stops:
/p/, /t/, /k/, /b/, /d/, /g/
and the glottal stop /ʔ/
- These noisy consonants don't have a steady state; they have a **different beginning, middle and end**.

The stages of a **stop** 塞音

- The stops:

/p/, /t/, /k/
/b/, /d/, /g/

have a **different beginning**,
middle and **end**.

<https://www.phon.ucl.ac.uk/wbt/tutorial/siphtra/plostut1/Stages.gif>

You'll find some of these sounds in the **first** and **second** columns of 注音符號：

A

ㄅ、ㄆ、ㄇ、ㄇ
ㄈ、ㄉ、ㄋ、ㄌ
ㄍ、ㄏ、ㄆ
ㄔ、ㄕ、ㄒ
ㄓ、ㄔ、ㄕ、ㄖ
ㄗ、ㄘ、ㄙ

B

ㄚ、ㄛ、ㄜ、ㄝ
ㄞ、ㄟ、ㄠ、ㄡ
ㄢ、ㄣ、ㄤ

There are other **noisy consonants**

- Noisy consonants also include hissing sounds, called **fricatives** 擦音, like:

/f/, /v/, /θ/, /ð/

/s/, /z/, /ʃ/, /ʒ/

All of these are quite **noisy**, i.e. they have many high pitches at the same time; don't have a single steady pitch or note you could find on a piano.

Still other **noisy** consonants
combine a **stop** and a **fricative**

- Noisy consonants that combine a stop and a fricative are called **affricates** 塞擦音. They include :

/tʃ/ and /dʒ/

- These are also quite **noisy**, i.e. they don't have a single steady pitch or note you could find on a piano.

You'll find some **fricatives** and **affricates**
in the **fourth**, **fifth** and **sixth** sets of
注音符號, plus ㄞ :

A

ㄅ、ㄆ、ㄇ、ㄊ
ㄋ、ㄌ、ㄍ、ㄖ
ㄍ、ㄎ、ㄞ
ㄗ、ㄘ、ㄣ
ㄗ、ㄘ、ㄣ、ㄟ
ㄗ、ㄘ、ㄣ

B

ㄩ、ㄗ、ㄘ、ㄣ
ㄗ、ㄘ、ㄣ、ㄟ
一、ㄗ、ㄣ

But **not all** consonants are **noisy**

- Certain consonants, like vowels, are also like singing, that is, they are **not noisy**.
- These include the **nasals**:
/m/, /n/, /ŋ/, which are routed through the **nose**;
- and the **liquids**, /r/ and /l/, which go through the **mouth**, but are also **steady state**, like vowels.

You'll find some of these sounds in the **third** and **fourth** columns of 注音符號：

A

ㄅ、ㄆ、ㄇ、ㄇ
ㄈ、ㄏ、ㄏ、ㄏ
ㄍ、ㄎ、ㄎ
ㄌ、ㄎ、ㄎ
ㄗ、ㄛ、ㄛ、ㄛ
ㄛ、ㄛ、ㄛ

B

ㄚ、ㄛ、ㄛ、ㄛ
ㄜ、ㄝ、ㄝ、ㄜ
ㄞ、ㄟ、ㄟ、ㄞ

What's left on the right are all **vowels**

A

ㄅ、ㄆ、ㄇ、ㄊ
ㄋ、ㄌ、ㄍ、ㄎ
ㄏ、ㄔ、ㄕ
ㄆ、ㄑ、ㄒ
ㄓ、ㄔ、ㄕ
ㄖ、ㄗ、ㄘ

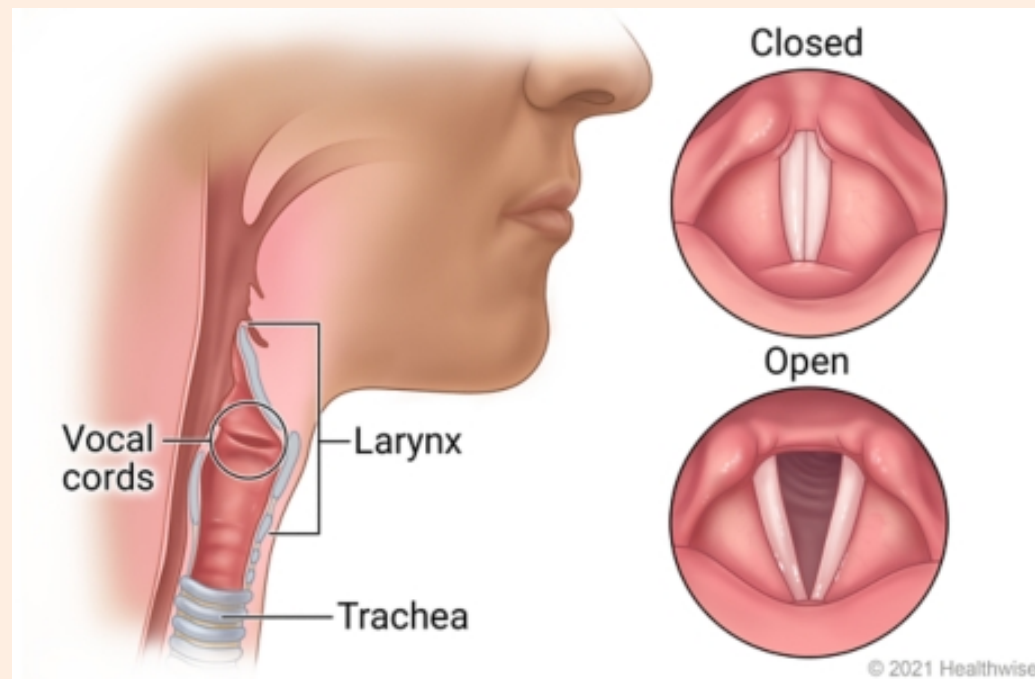
B

ㄩ、ㄜ、ㄝ、ㄞ
ㄟ、ㄠ、ㄡ、ㄢ
ㄣ、ㄤ、ㄥ

Generally, all vowels are **voiced**,
i.e. the vocal folds **vibrate** –
say “**aaaahh**”, and feel your throat!

What is **voicing**?

The **vocal folds vibrate rapidly**, cutting up the airflow from the lungs into tiny bubbles.



**Fantastic Voyage –
a journey into the human voice**

https://www.youtube.com/watch?v=x_X83_EolcQ&ab_channel=NCVS456

Image source: <https://myhealth.alberta.ca/Health/Pages/conditions.aspx?hwid=zm6118>

Vowels are like **singing** 🎵

Because vowels are **voiced** and **unobstructed** in the mouth, they have **pitch**, a relatively long note 音符 you could find on a piano, like singing.

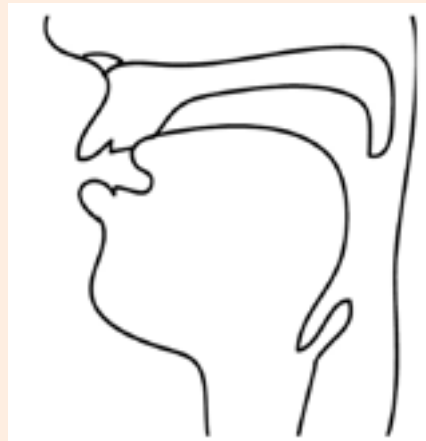
Consonants: Something **obstructs**
the airflow from the lungs

Vowels: The airflow is **unobstructed**

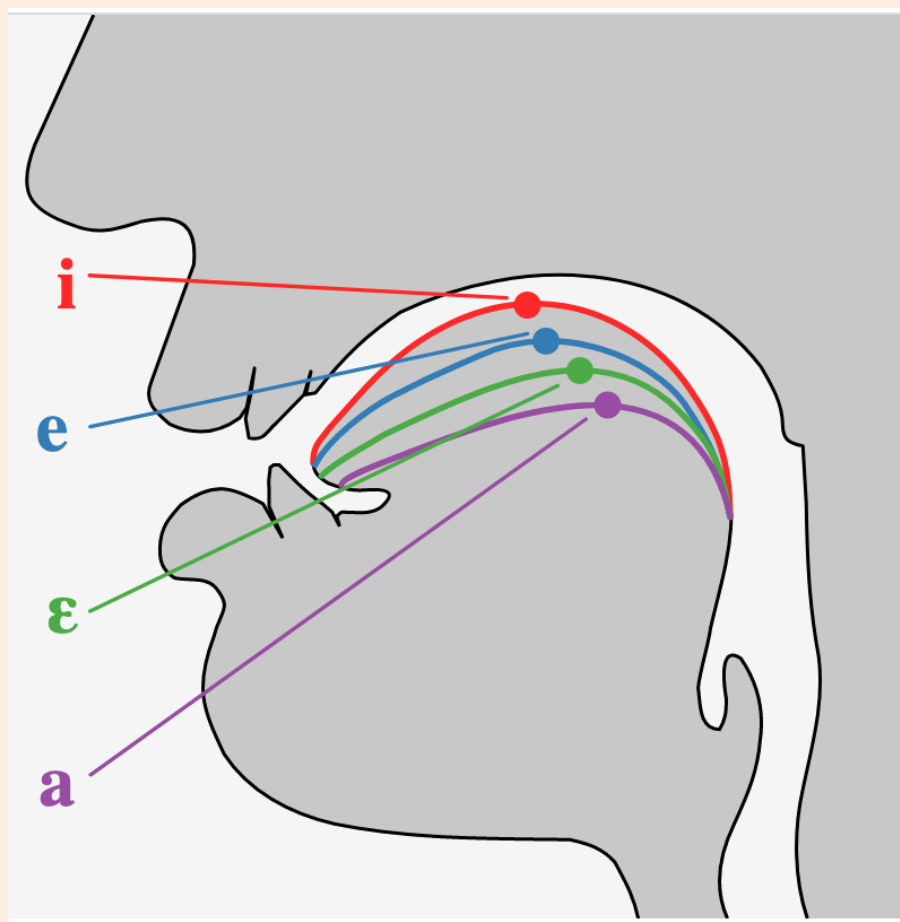
To form a **consonant**, something must
be **touching** something else.

To form a **vowel**, the tongue is
not really **touching** anything else
舌頭要懸空。

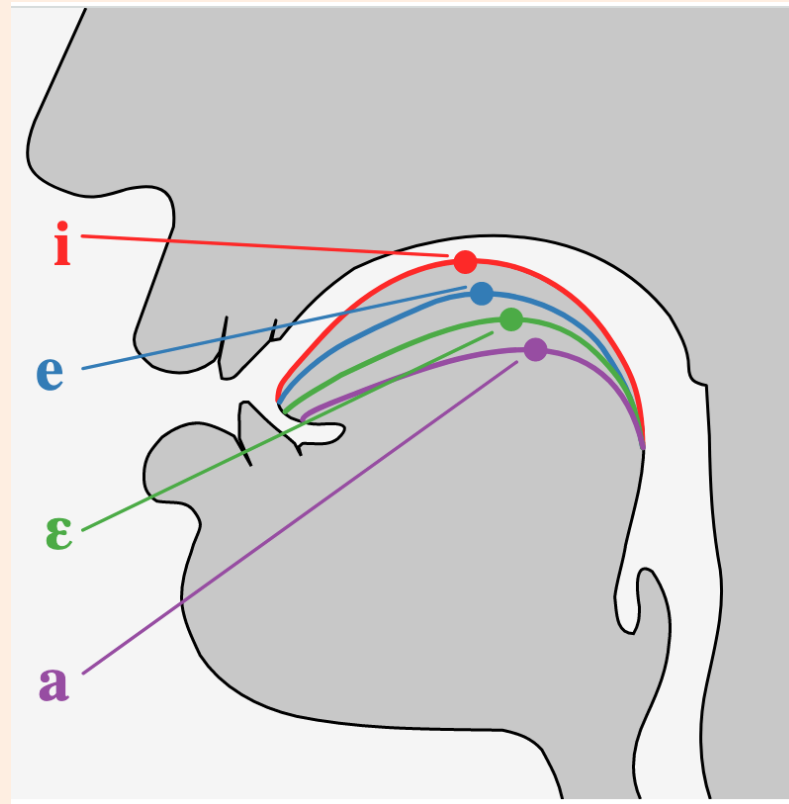
It is often relatively easy to
describe a **consonant**:
just say what is **touching** what.
We can easily do this with drawings
and charts.



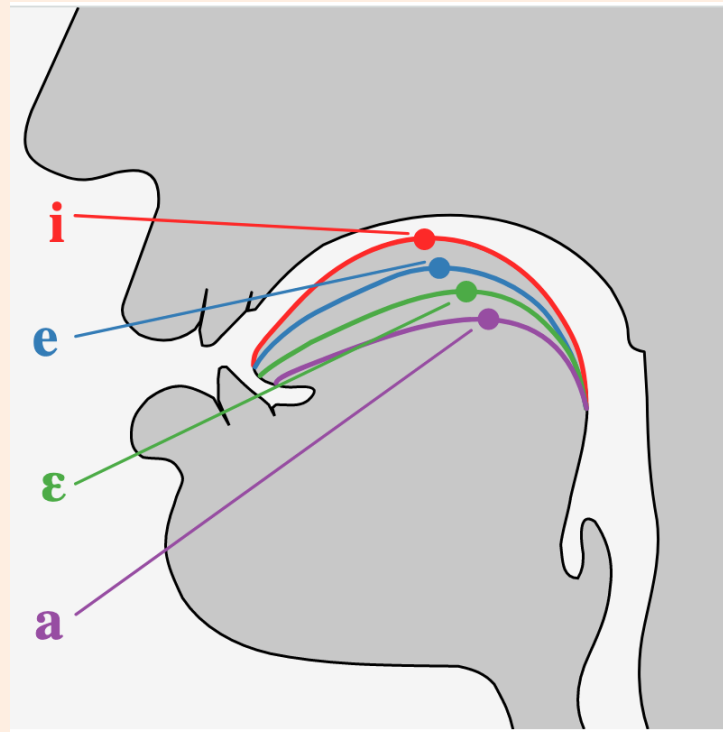
But how do you describe a **vowel**,
in which the tongue is **mid-air** 懸空,
not really **touching** anything else?



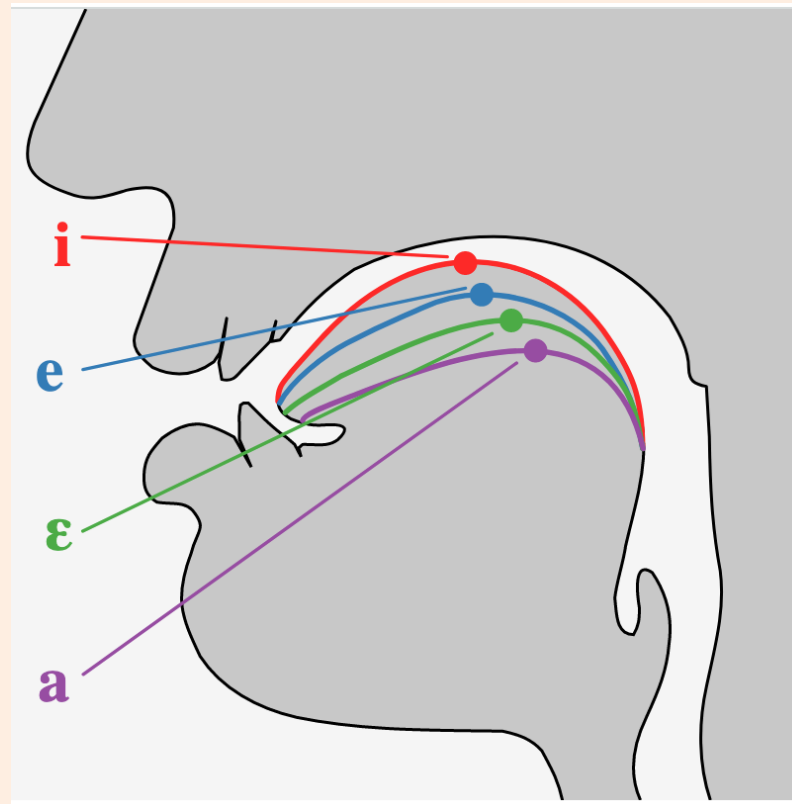
Although you can see the different tongue heights and backness in the figure, it's not very useful in **producing** a vowel precisely.



One reason is because
a mid-air tongue position is
hard to feel in your mouth
(**proprioception** 本體感覺)
and judge the **accuracy** of.



In addition, everybody's mouth is a bit different, so the drawing can only give you the **main idea** of what to do; it can only give you a relative position and not a **precise** one.



Fortunately, we **humans** in fact have
very sensitive hearing – no need to
envy dogs and bats!

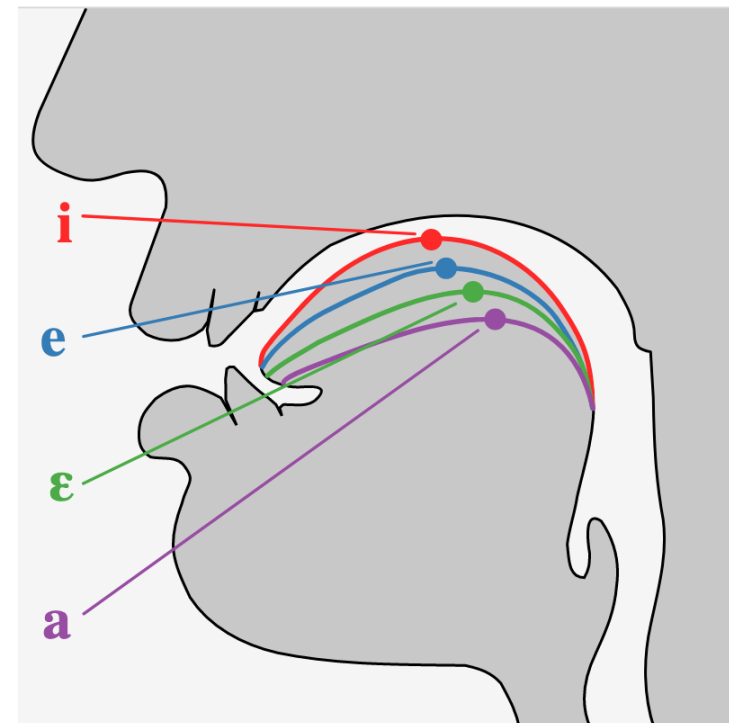
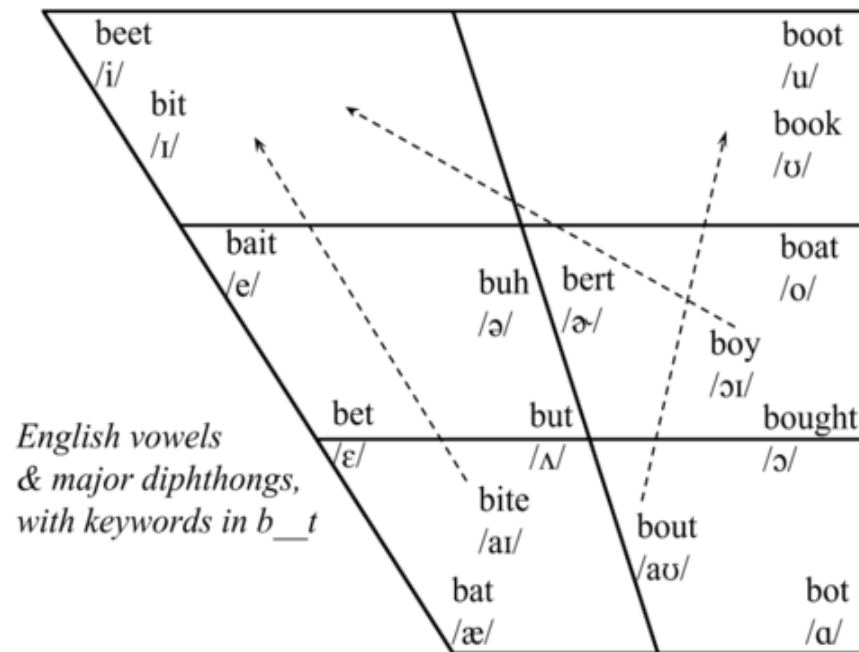


For this reason, we rely most strongly
on our **ears** (not charts)
to **hear**, **distinguish** 辨認, and **produce** 發出
accurate vowels.

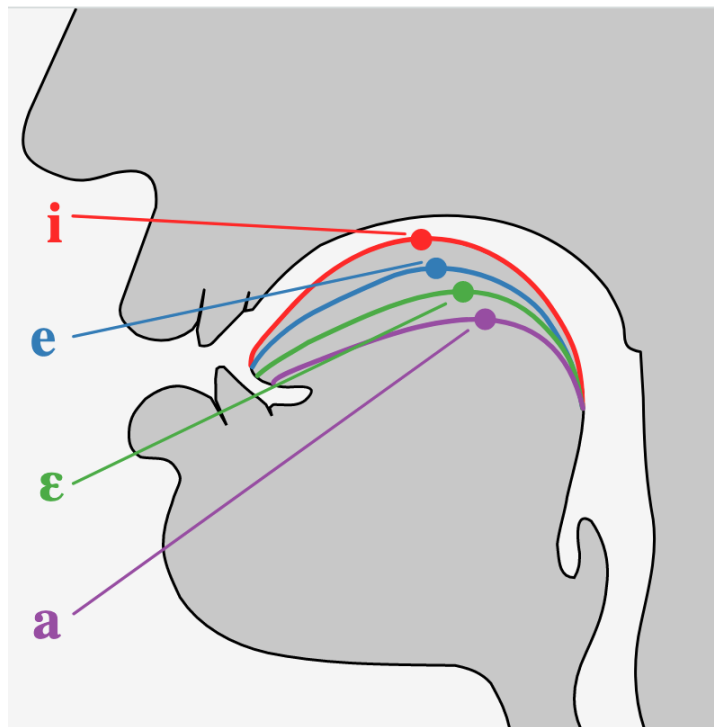


Still, charts are still a useful **reference** to understand the **concept** of how vowels work.

Here is the **vowel space** in your mouth.

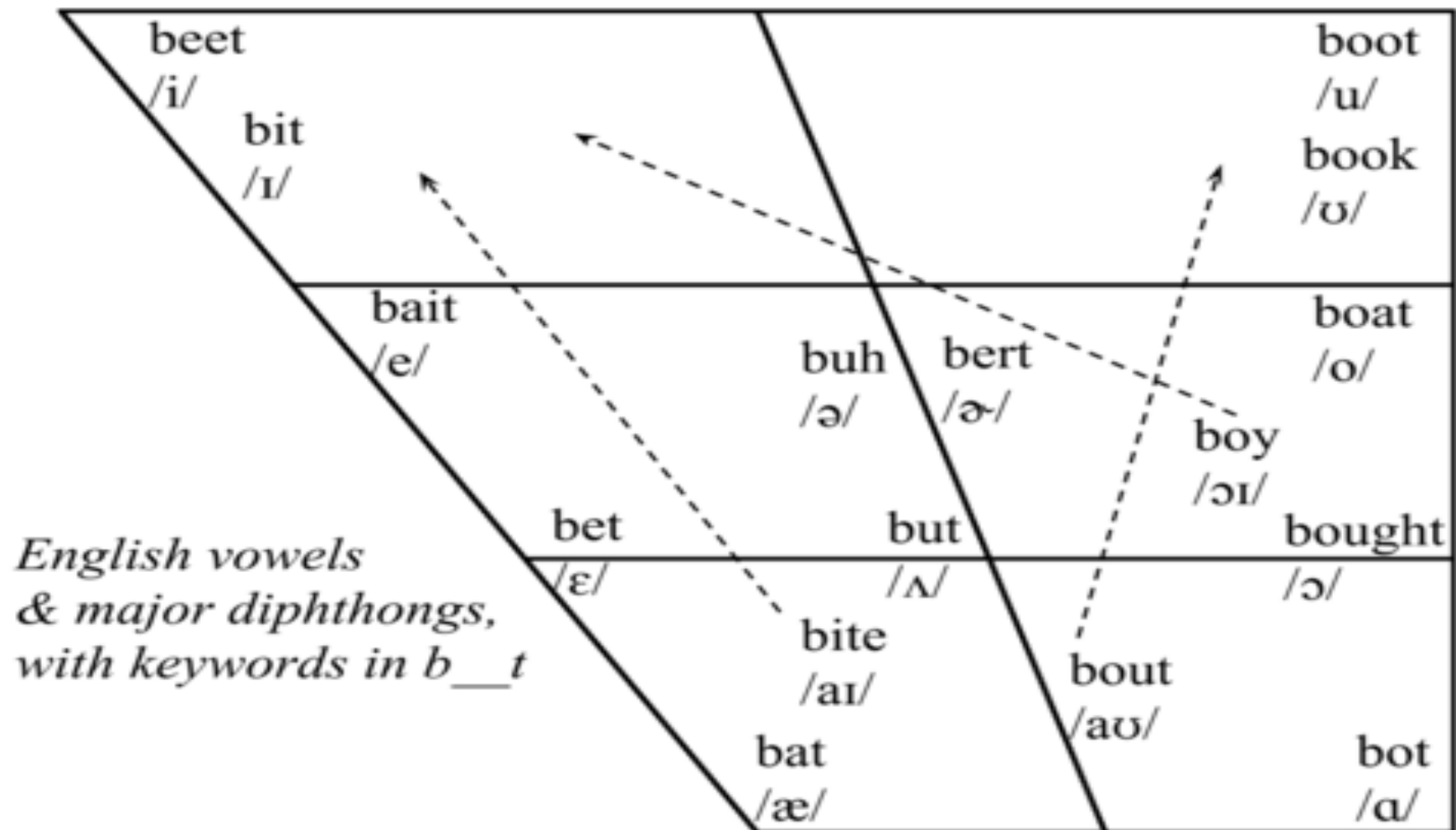


For physics and acoustics people:
Here is a technical demonstration
of how vowels actually **work**.

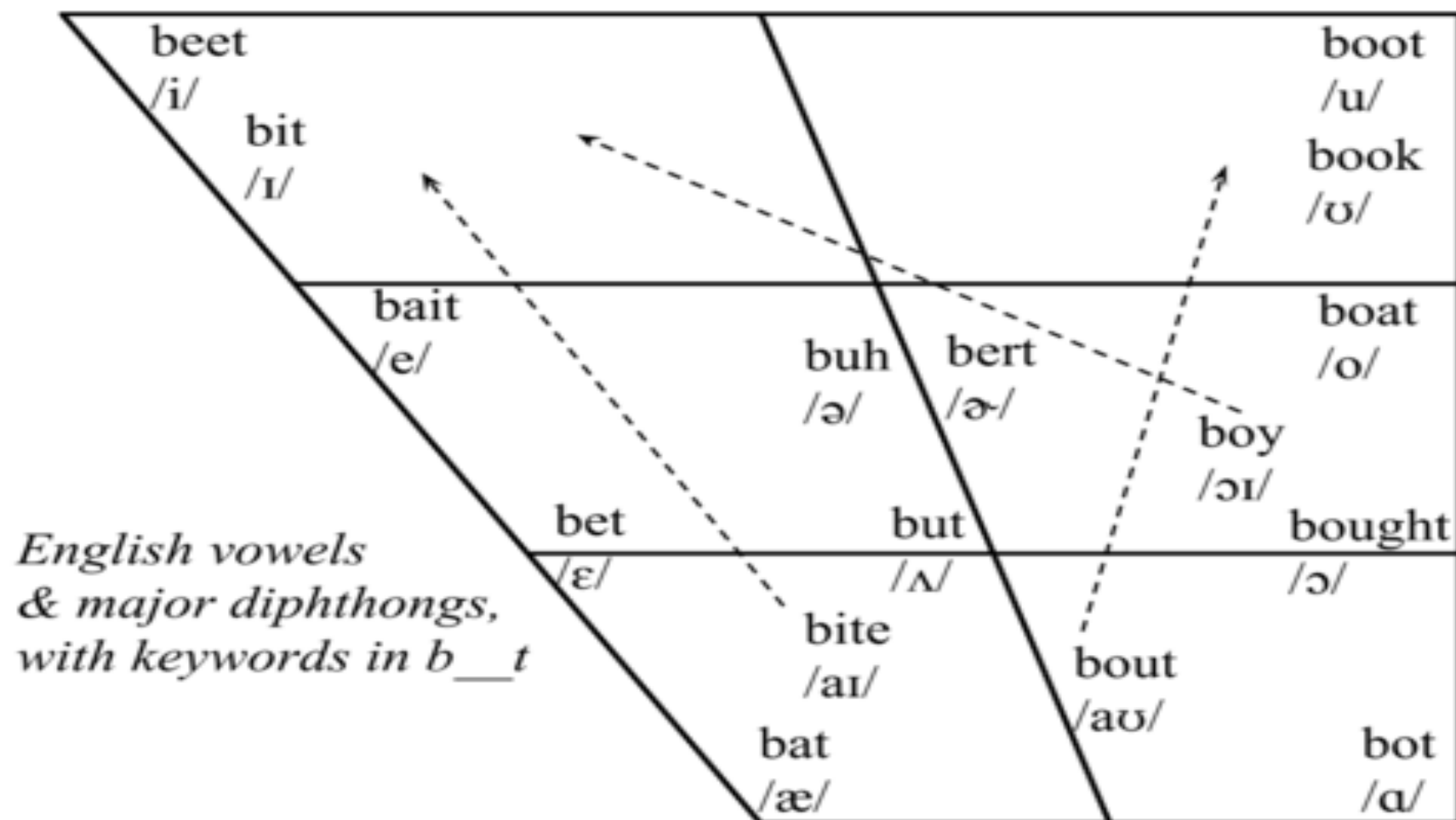


https://www.exploratorium.edu/files/exhibits/vocal_vowels/vocal_vowels.html

Can you **feel** what your **tongue** is doing
as we go through the **English vowels**?



Note that there are **two** kinds of vowels:
monophthongs 單母音 and **diphthongs** 雙母音, which
involve **movement** from one vowel point to another.



Also note that in words
ending with a voiced sound,
the preceding **vowel** will be **longer**.

Examples:

bit **t** bid **d**

hat **t** had **d**

feet **t** feed **d**

lap **p** lab **b**

pick **k** pig **g**

Productivity break: **Kaizen**

Do a little bit every day, no matter what!

One Small Step Can Change Your Life:

with **Kaizen**

<https://www.youtube.com/watch?v=VHkOFs67d9A%20>

**Most English vowels have
very close equivalents in
Mandarin Chinese.**

[https://homepage.ntu.edu.tw/~karchung/
IPAnew.pdf](https://homepage.ntu.edu.tw/~karchung/IPAnew.pdf)

子音 1—看音標就知道發音			
音標	字母	發音	
b	b	有聲ㄅ	
d	d	有聲ㄉ	
g	g	有聲ㄍ	
f	f	ㄈ	
h	h	輕輕哈氣	
l	l	ㄌ	
m	m	ㄇ	
n	n	ㄋ；ㄣ	
r (ɹ)	r	ㄦ	
s	s	ㄙ	
v	v	有聲 ㄈ	
w	w	ㄨ（如：「ㄨ」ㄣ）	
z	z	有聲 s	
子音 2—可能送氣、不送氣（皆為無聲）			
音標	字母	發音	例子
p	p	[p] ㄅ	spy
		[pʰ] ㄅˊ	pay
t	t	[t] ㄊ	style
		[tʰ] ㄊˊ	take
k	k, c	[k] ㄎ	sky
		[kʰ] ㄎˊ	kick
/s/ 後之 /p/、/t/、/k/ 不送氣。（師德 13）			
子音 3—dʒ, tʃ, ʃ, ʒ			
音標	字母	發音	例子
dʒ	g	用ㄘ唸ㄗ	change
	j		just
	-dge		edge, bridge
tʃ	ch	用ㄘ唸ㄘ	church
	-stion		question
	-ture		mature
	-tch		catch, witch
ʃ	sh	用ㄕ唸ㄊ	shock
	-tion		exhibition
	-tial		confidential
	-su-		assure, sure, tissue
ʒ	-sion	有聲的 ʃ	television
	-age		garage
	g, j		genre（法語外來語）
	-su-		measure, usual

音檔：<http://www.gotoabc.url.tw/kk/kklist.htm>

子音 4—特殊符號/組合			
音標	字母	發音	例子
j	y-	一（如：「一」せ）	yes, year
ŋ	-ng	「ㄣ」、「ㄣ」	song
	-nk	[-ŋk]	thank
	-nc-		extinct
	-nqu-		conquer (師德 9、10)
θ ð	th	輕咬舌尖送氣 θ: 無聲 (有重音實詞) ð: 有聲 (虛詞)	three the (師德 13)
z ks gz	x	[z] 字首 [ks] 後接子音；後接 母音但該音節無重音 [gz] 後接母音且該音 節有重音	xylophone expect, oxen example (師德 14)
kw	qu-	ㄅㄨ(ㄅ)	question
母音 1—單母音 (單元音)			
音標	發音		例子
i	一		feet
ɪ	舌頭位置比較低/後； 行軍「『一』、二」		fit (師德 3)
ɛ	直「接」，收下巴； 「英」後 (台語)		said
æ	嘴巴張大的 ɛ，比 ɛ 長很多		sad
ɑ	ㄚ		box
ɔ	芋仔 (台語，唸成一個音節)		dog
u	ㄨ；「路」		too
ʊ	ㄨ；「倫」		took (師德 11)
ʌ	像 ə，音較長、舌頭較低		mother
ə	ㄜ (發呆音)；央音		about
ə	發音同；台式標準國語儿； ɜ 出現在有重音音節		sister
ɜ			bird
母音 2—雙母音 (複元音)			
音標	發音		例子
aɪ	ㄞ一		sigh
eɪ	ㄟ一		name
aʊ	ㄞㄨ		how
oʊ	ㄞㄨ		toe
ɔɪ	ㄛ一 (ㄛ唸得短一點)		boy
ju	字母 "U" 的名稱		cue

上一頁的 IPA 表只適用於美式標準英文
提及的注音符號也只適用於台式標準國語
(捲舌沒有北京腔那麼捲)

2. IPA 與 KK

IPA, International Phonetic Alphabet 國際音標
KK 是 IPA 的其中一個分支

KK 與 IPA 的主要差異：

$$[o] \rightarrow [ou]$$
$$[e] \rightarrow [e_I]$$
$$[r] \rightarrow [j]$$

<http://homepage.ntu.edu.tw/~karchung/intro%20page8.htm>

3. // 和 [] 的差異

// 音位 → 認定的、粗略的

[] 同位音 → 實際上的語音、標示細節

音位不是一個實際的語音。一個音位可以有數種不同的發音，但是語言使用者心理上認定這幾種發音是等同的。音位內的這些不同發音，稱為**同位異音**或**音位變體**。

(上表的「音標」欄屬「音位」)

<http://homepage.ntu.edu.tw/~karchung/intro%20page%2014.htm>

<http://zh.wikipedia.org/wiki/%E9%9F%B3%E4%BD%8D>

例：

/t/ 音位的同位異音可能有很多個

$$\text{take} \rightarrow [\mathbf{t}^h]$$

water → [ɹ] tap (像很短的 [d])

waste → [t̪] 不除阻

4. 重音符號

當一個單字的音節數>1，要在重音音節左上角加上重音符號 (')。

5. [ɪ] [æ] [ɛ]

[ɪ, ɛ, æ] + [ŋ, ɡ] → 變得較接近 [i] [e] [e]

其變作介於兩者之間的音：[ɪ] [æ] [ɛ]

因為 [ɪ, ɛ, æ] + [g, ŋ] 的單字就算念得像 [i] [e] [e] 也不會造成意思誤解，因為只會有一個可能的單字。如：在 [k] 之前，[ɪ] 和 [i] 發音不同，就會是不同的字—week [wik], wick [wɪk]。

但在 [ŋ] 前沒有那種「需要 [ɪ] 和 [i] 發音不同而意義不同」的單字，所以就算念成 [ɪ] 和 [i] 之間的音，大家也不會搞錯字。

在 [ŋ] 前 [ɪ, ɛ, æ] 上升程度 > 在 [g] 前。

<http://homepage.ntu.edu.tw/~karchung/intro%20page%2015.htm>

6. 建議學習順序：子音→母音

子音：

(1) p, t, k 不送氣 → p, t, k 送氣 → b, d, g

(2) m, n, η

(3) $f, v + s, z$

(4) h, w, r, l (†), j

(5) θ, δ

(6) d₃, t_f, f, z

母音

(1) i, x

(2) $\varepsilon, \text{æ}, a, \text{ɔ}$

(3) u, v

(4) λ, ϑ

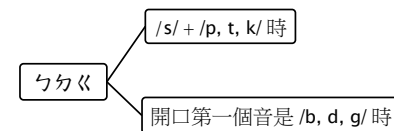
(5) ∂, \mathfrak{z}

(6) aɪ, eɪ, aʊ, oʊ

(7) $\exists x$

(8) ju

7.



No need to **memorize** these
by rote 死背 now!

But this is a very useful **reference**!

Some vowels are
frequently confused
in Taiwan English.
We're now going to
work on some of these!

/ɪ/ vs. /i/: Some minimal pairs

it	eat	bid	bead
sit	seat	did	deed
bit	beat	rid	read/reed
dip	deep	sin	seen/scene
chip	cheap	bin	bean
ship	sheep	grin	green
slip	sleep	win	wean
sick	seek		
pick	peek/peak		

/ʊ/ vs. /u/

look

would/wood

pull

cook

should

full

could

hood

Luke

wooded

pool

kook

shooed

fool

cooed

who'd

/ɛ/ vs. /æ/

set

sat

mess

mass

bet

bat

guess

gas

met

mat

pet

pat

flesh

flash

mesh

mash

sec

sack

wren

ran

peck

pack

pen

pan

neck

knack

Jen

Jan

wreck

rack

men

man

/eɪ/ vs. /æ/

ate	at	pain	pan
rate	rat	main	man
hate	hat	rain	ran
fate	fat	cane	can
Kate	cat	vain	van
bait	bat	Jane	Jan
tape	tap	plane	plan
scrape	scrap	brain	bran

/æ/ vs. /ɛ/ vs. /eɪ/

set

sat

sate

bet

bat

bait

met

mat

mate

pet

pat

pate

sec

sack

sake

tech

tack

take

beck

back

bake

wreck

rack

rake

sell

Sal

sale/sale

shell

shall

shale

/oʊ/ vs. /ɔ/

so/sew

low

no/know

Joe

row/roe

slow

flow

saw

law

gnaw

jaw

raw

slaw

flaw

boat

tote

coat

oat

phone

loan

drone

prone

bought

taught

caught

ought

fawn

lawn

drawn

prawn

/a/ vs. /ʌ/

cot

not/knot

got

shot

hot

cop

pop

cut

nut

gut

shut

hut

cup

pup

cob

rob

sob

Ron

body

cub

rub

sub

run

buddy

/i/ vs. /ji/

two ears

ten ears

six ears

my ears

ear to ear

ear's end

east is east

from the east

two years

ten years

six years

my years

year to year

year's end

yeast is yeast

from the yeast

The Perfect Paragraph Method



Brad and Ryan chatted a bit more as they finished their lattes.

Brad glanced up at the woman again and closed his eyes briefly.

“I know what it is. And it is really, truly strange,” he said.

“So what *is* it?” Ryan asked anxiously.

Wrap-up 1

- English relies heavily on **vowels** to distinguish the meanings of different words, e.g. exp**e**nsive vs. exp**a**nsive; often, wrong vowel → wrong meaning. Pay close attention to **vowels** and practice **mindfully**!
- Develop and use your **sharp hearing** to recognize and keep all your vowels **on-target**; the **Echo Method** can help you hear every sound clearly. Practice **minimal pairs**.

Wrap-up 2

- **Check** the pronunciation with **MW** audio files or **YouGlish** of every single word you're not 100% sure of.
- Use **podcasts**, **audio books**, **text-to-speech (TTS)** and **Siri** to practice listening and speaking **daily**.
- Try to find a **language exchange** for practice.

Feedback and discussion

Thank you!

Please be generous
with your **feedback!**