

# Chapter 4

## English Vowels

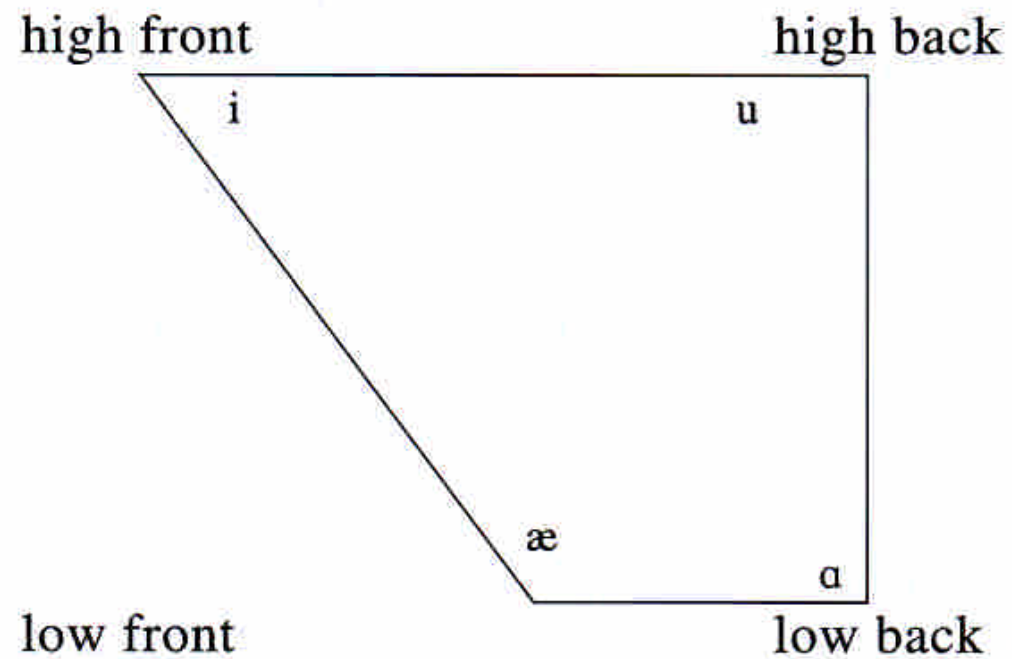
## Vowel quality

- There are no distinct boundaries between one type of vowel and another and the movement of a vowel is a continuum. Try any vowel in English.
- How to describe vowels: by describing the tongue position or describing the **auditory quality** of the vowel?
- Demonstrate the vowels with CBCAP and PRAAT.
- Try to pronounce a word in different accents and see how these accents look like through the above instruments.

# The vowel space

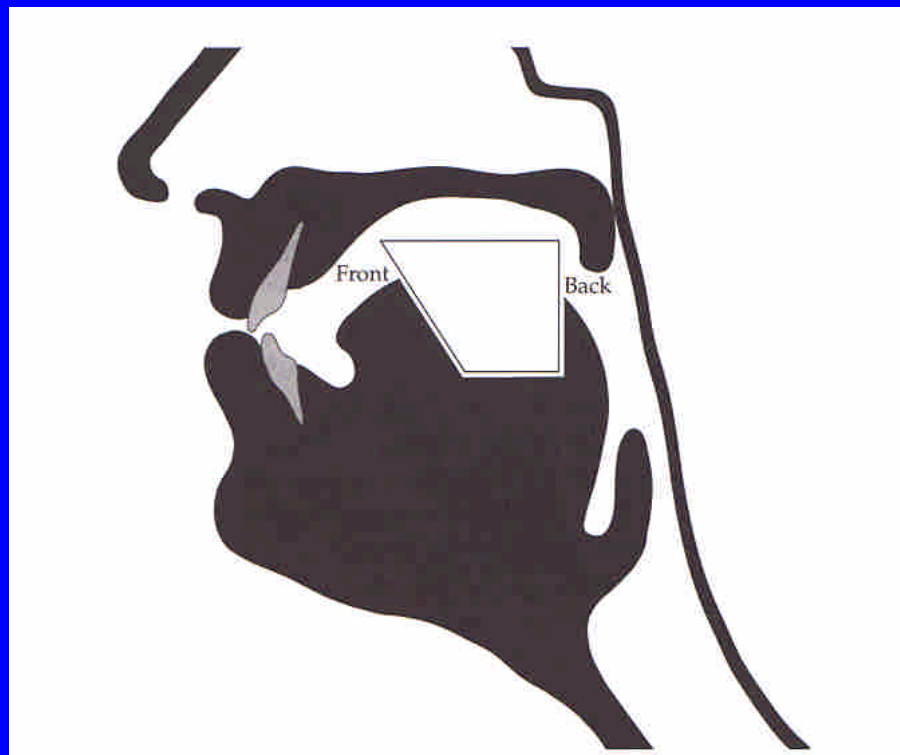
FIGURE 4.1

The vowel space.



## The notion of the vowel space

Make sure we can locate the “vowel space” and know the basic features of each vowel



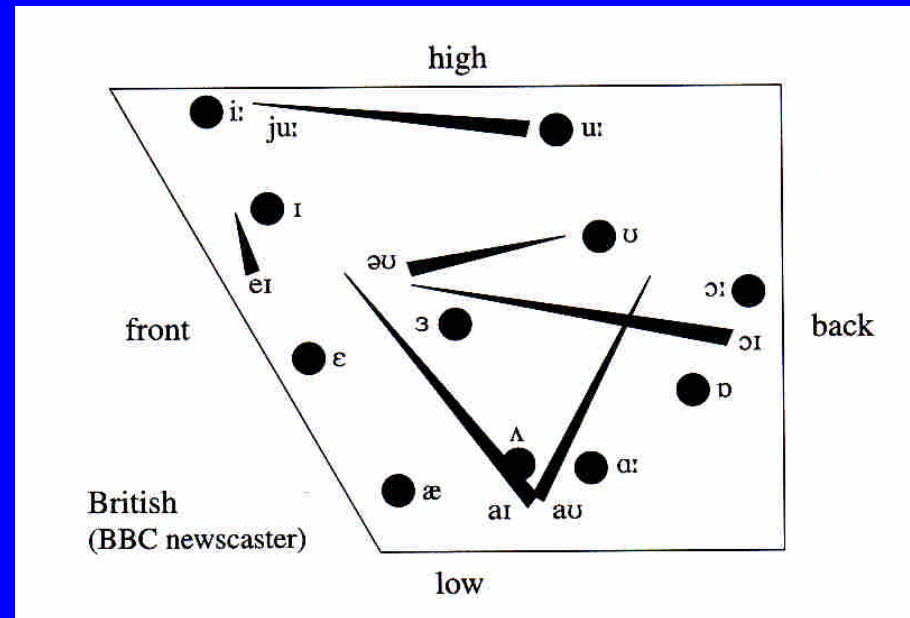
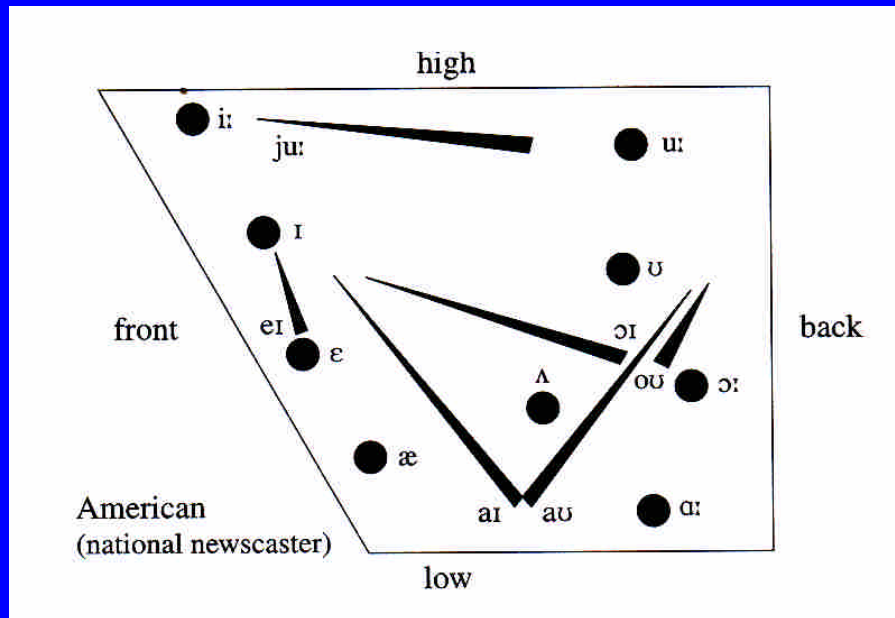
## Monophthongs or diphthongs?

- Can you identify the following vowels as monophthongs or diphthongs?

[ou] [ɪ] [u] [æ] [au] [aɪ]

- Can you identify the “track” of the sounds mentioned above?

# Compare the “tracks” of the diphthongs



## Rounded and unrounded vowels

- Front vowels are unrounded vowels.
- How do you read /ʊ/ in “good” “cook” “took” and “book”?
- What about “food”? Do you pronounce /u/ sound in a rounded way? What is the difference between the English /u/ sound and the Mandarin /u/ sound.
- Identify the track of the /ju/ sound in English.

# Rhotacization

- The feature rhotacization describes an auditory property, the r-coloring, of a vowel.
- In most forms of American English, there are both stressed and unstressed rhotacized vowels. The transcription for the phrase "my sister's bird" in most forms of American English would be [maɪ 'sɪstəʳz 'bɜːd].
- X-ray studies of speech have shown that in both these ways of producing a rhotacized quality there is usually a constriction in the pharynx caused by retraction of the part of the tongue below the epiglottis.



## Unstressed syllables

- The symbol [ə] or [ɪ] may be used to designate many vowels that have a **reduced vowel** quality.

	<b>Stressed Syllable</b>	<b>Unstressed Syllable</b>	<b>Reduced Syllable</b>
i:	de <b>pre</b> ciate	cre <b>ate</b>	depre <b>cate</b>
ɪ	im <b>pli</b> cit	sim <b>pli</b> stic	im <b>pli</b> cation
eɪ	expl <b>ai</b> n	cha <b>o</b> tic	expl <b>ai</b> nation
ɛ	al <b>le</b> ge	tem <b>pe</b> stuous	al <b>le</b> gation
æ	em <b>ph</b> atic	fan <b>ta</b> stic	em <b>ph</b> asis
ɑ:, ɒ	demon <b>str</b> able	prog <b>no</b> sis	demon <b>str</b> ation
ɔ:	ca <b>u</b> se	ca <b>u</b> sality	
oʊ, əʊ	in <b>vo</b> ke	vo <b>ca</b> tion	in <b>vo</b> cation
ʊ	hoo <b>d</b> wink	neigh <b>bor</b> hood	
u:	aco <b>u</b> stic	aco <b>u</b> stician	
ʌ	con <b>fr</b> ont	um <b>br</b> ella	con <b>fr</b> ontation
ɜː, ɜ:	con <b>fi</b> rm	ver <b>bo</b> se	con <b>fi</b> rmation
aɪ	rec <b>i</b> te	ci <b>ta</b> tion	rec <b>i</b> tation
aʊ	de <b>vo</b> ut	ou <b>ts</b> ider	
ɔɪ	explo <b>i</b> t	explo <b>i</b> tation	
ju:	com <b>pu</b> te	com <b>pu</b> tation	circu <b>lar</b>

# Tense and lax vowels

- Not simply a matter of “tension”
- Closed syllables vs. open syllables

Tense Vowels	Lax Vowels	Most Closed Syllables	Open Syllables	Syllables Closed by [r]	Syllables Closed by [ŋ]	Syllables Closed by [ʃ]
i:	ɪ	beat	bee	beer		(leash)
eɪ	ɛ	bit			sing	wish
	æ	bait	bay			
		bet		bare	length	fresh
ɑ:		bat	pa	bar	hang	crash
ɔ:		hot	saw	bore	long	(wash)
oʊ		bought	low	(boar)		
	ʊ	boat				push
u:		good	boo	poor		
	ʌ	boot			hung	crush
aɪ		but	buy	fire		
aʊ		bite	bough	hour		
ɔɪ		bout	boy	(coir)		
ju		void	cue	pure		
		cute				

## Rules for English vowel allophones

1. A given vowel is longest in an open syllable, next longest in a syllable closed by a voiced consonant, and shortest in a syllable closed by a voiceless consonant.
2. Other things being equal, vowels are longer in stressed syllables.
3. Other things being equal, vowels are longest in monosyllabic words, next longest in words with two syllables, and shortest in words with more than two syllables.

speed

speedy

speedily

4. A reduced vowel may be voiceless when it occurs after a voiceless stop (and before a voiceless stop).

permission, tomato, compare, potato, catastrophe

preparatory, introduction, replicate, complicate

5. Vowels are nasalized in syllables closed by a nasal consonant.

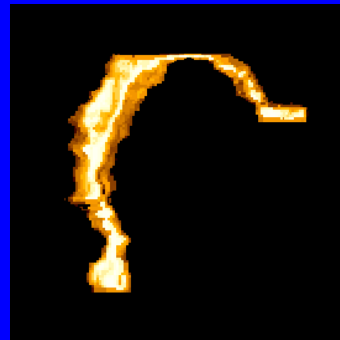
ban, run, seen

6. Vowels are retracted before syllable final [ɫ].

peel, pail, pal

## Here are some MRI charts of oral tracts for vowels

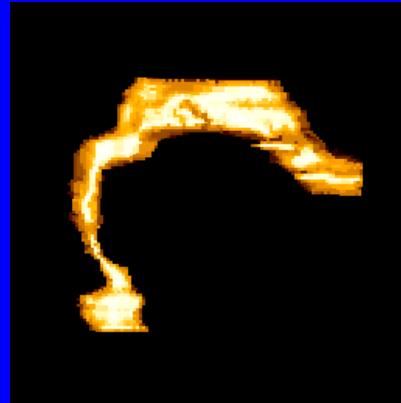
- /i/



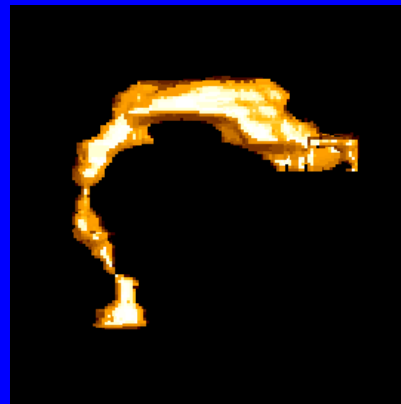
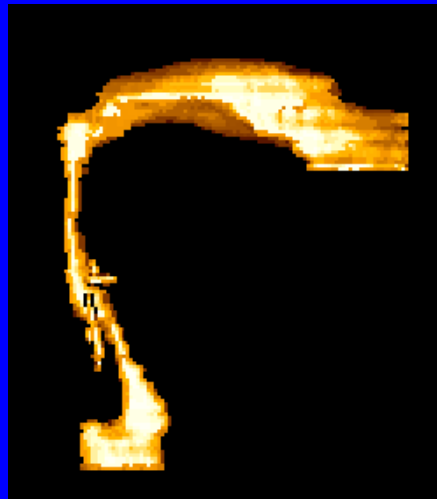
- /ɪ/



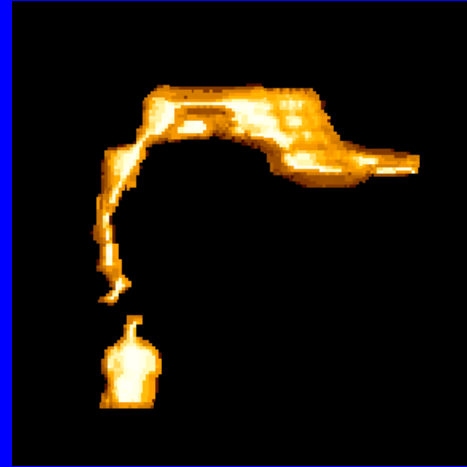
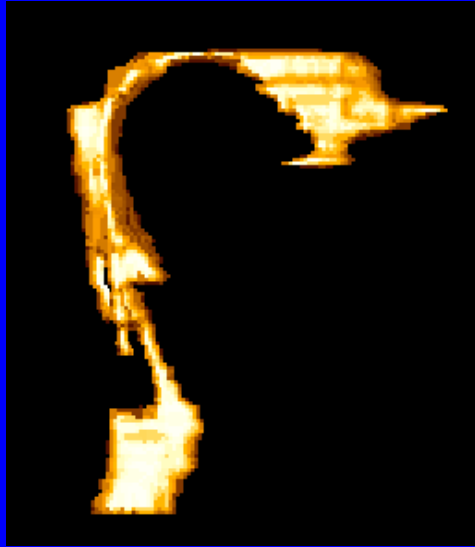
- /æ/



- /ɑ/



- /o/



- /u/

