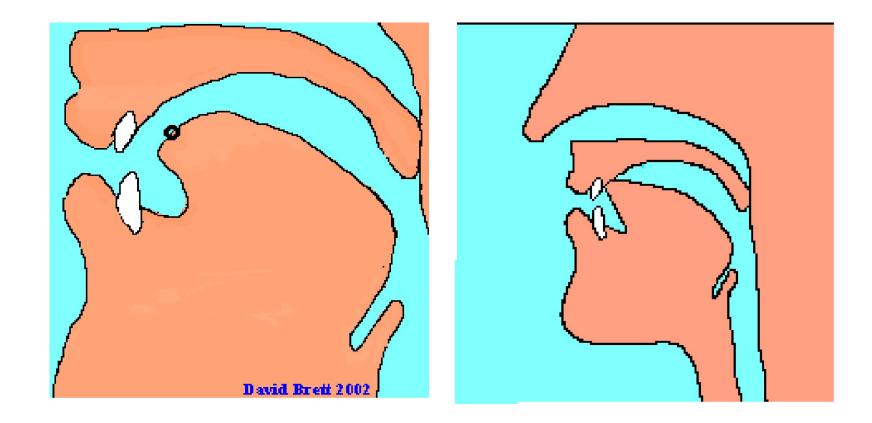
Describing Vowels & Diphtongs

ANI SETYANINGSIH anisetyaningsih@uny.ac.id

phon/2011 12 November 2015

What differ vowels from consonants?

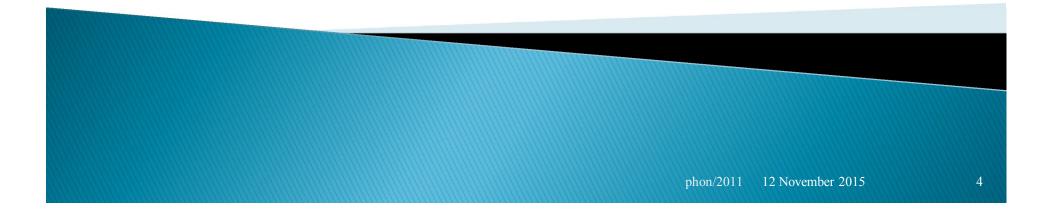


VOWELS VS CONSONANTS

VOWELS	CONSONANTS
Produced with no oral obstruction	produced with a narrow or complete closure in the vocal tract
More sonorous	Less sonorous
syllabic	Non-syllabic



VOWELS





are made by shaping the column of air rather than by obstructing it

Organs involved:

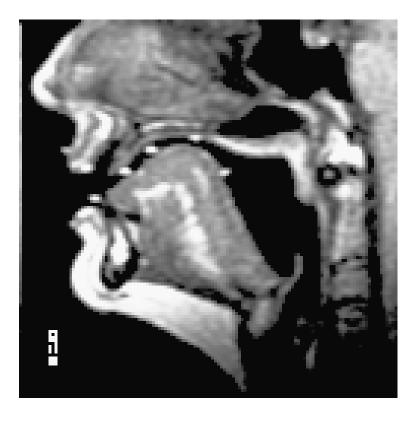
- 1. Tongue (forward, backward, up, and down)
- 2. Jaw (raised, lowered)
- 3. Lips (spread, rounded)

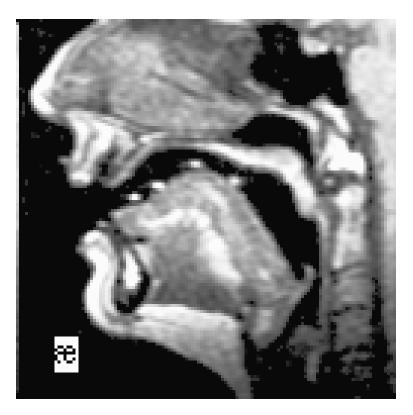


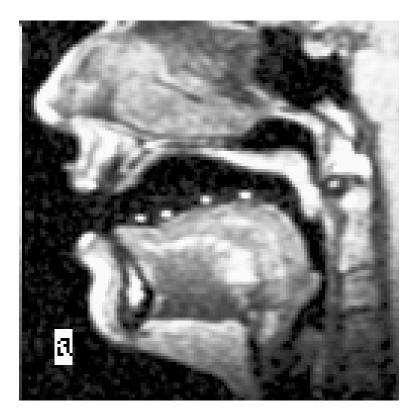
WAYS TO DESCRIBE VOWELS

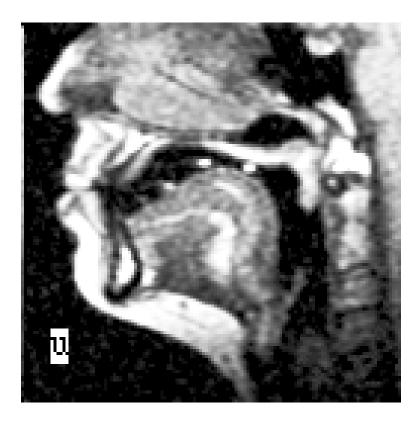
- Quality > determined by the particular configuration of the vocal tract (lips and tongue)
 - $^\circ$ the height of the tongue \rightarrow high/mid/low
 - $^{\circ}$ the part of the tongue \rightarrow front/central/back
 - $^\circ$ the position of the lips \rightarrow rounded/spread lips rounding
- Oral or nasal production
- Length: long vs short; tense vs lax

These are x-rays of a person producing different vowels

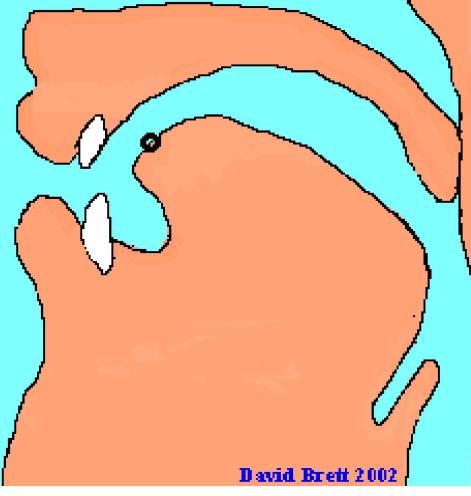




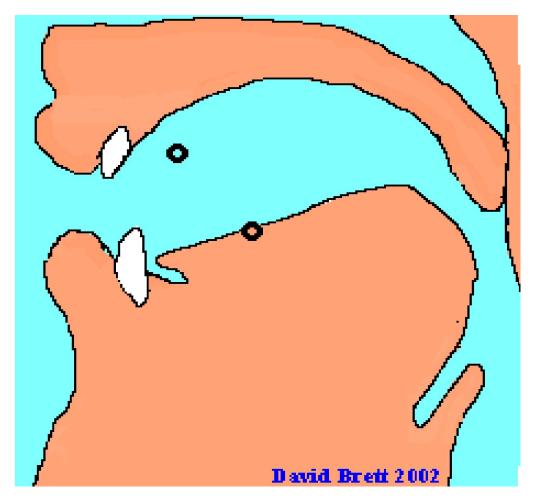




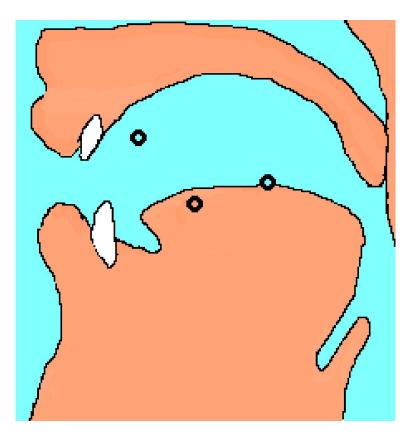
In the close front position (unrounded) we produce /i/



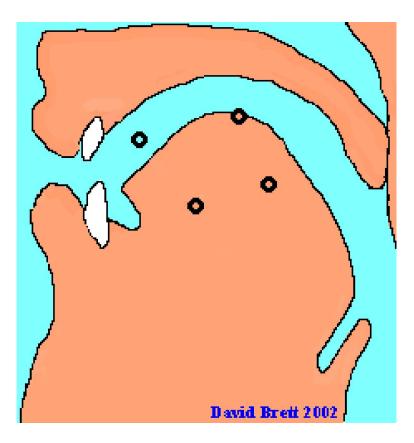
In the open front position (unrounded) we produce /ʌ/



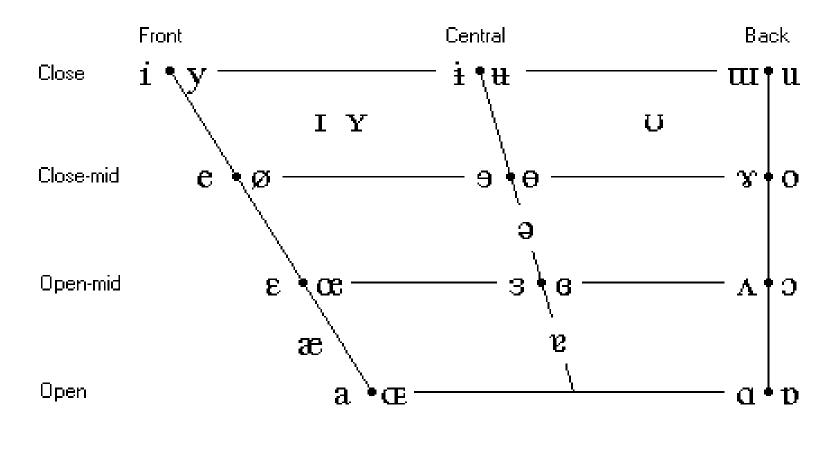
Back open (unrounded) : /ɑ:/



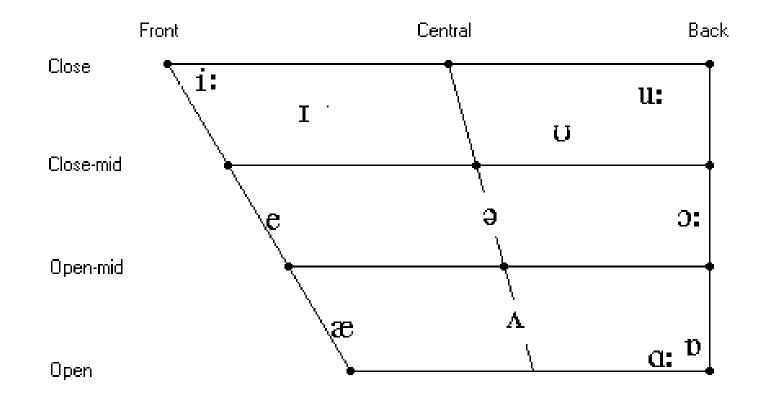
Back close (rounded): /u/



This is the full set:



These are the places of articulation of English short and long pure vowels



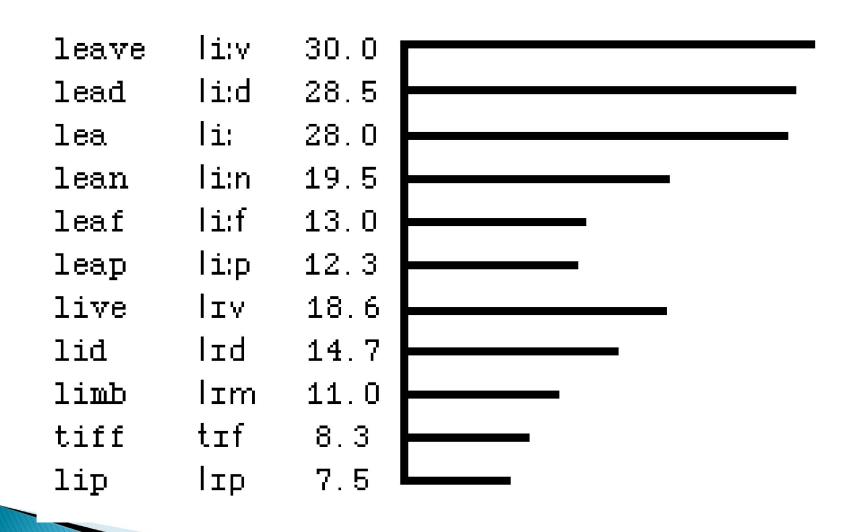
Length

- English vowels differ in length as well as in quality
- These differences are as important to perception as quality
- English long vowels are far longer than Italian equivalents (e.g. /i:/, /u:/)

Pure Vowels		
Short	Long	
I	i:	
Ð	3:	
u	u:	
^	a:	
c \a	p:/s:	
е		
æ		

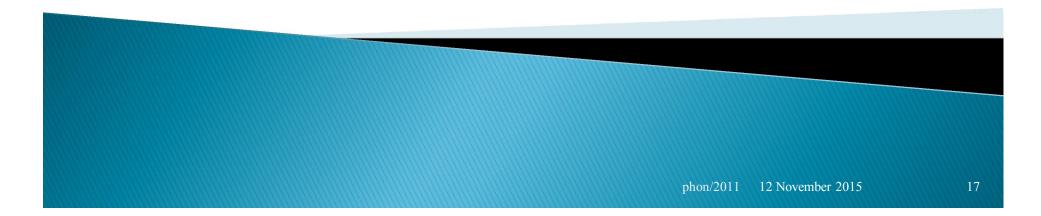
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Vowel length in centiseconds:



phon/Data2fromeGimson 1980:98)

DIPHTHONGS



* While the position of the tongue is more or less stable for a pure vowel, a diphthong is characterised by a graceful movement from one point to another.

* For this reason they are also sometimes known as glides.

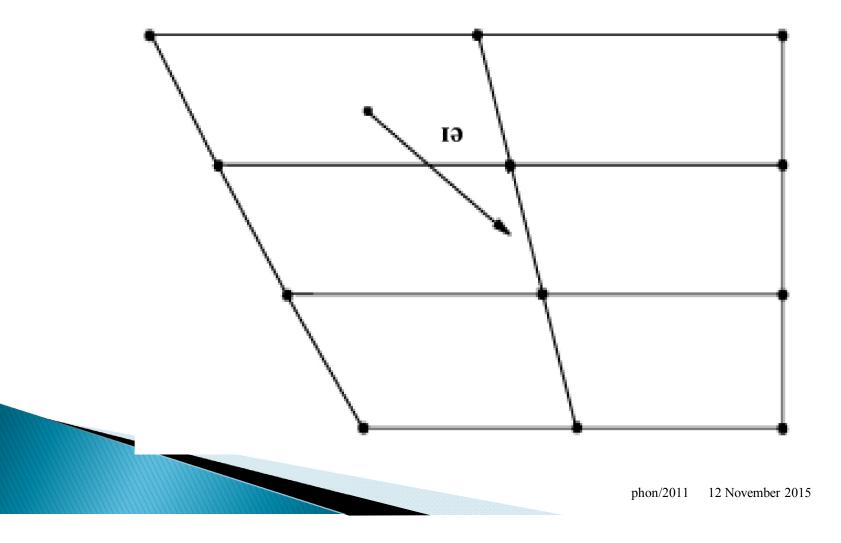
Technically, English diphthongs are divided into two groups:

- There two types of diphthongs:
 - centring diphthongs → the tongue moves quickly toward the center of the mouth (the final phase of the articulation)
 e.g. i∂, e∂, u∂
 - 2. closing diphthongs \rightarrow the tongue starts in a relatively low position and ends up in a high position either in palatal area at the mouth or in the velar the back part of the mouth
 - e.g. ending in 1 : e1, a1, 31
 - ending in u : **Ju, au**

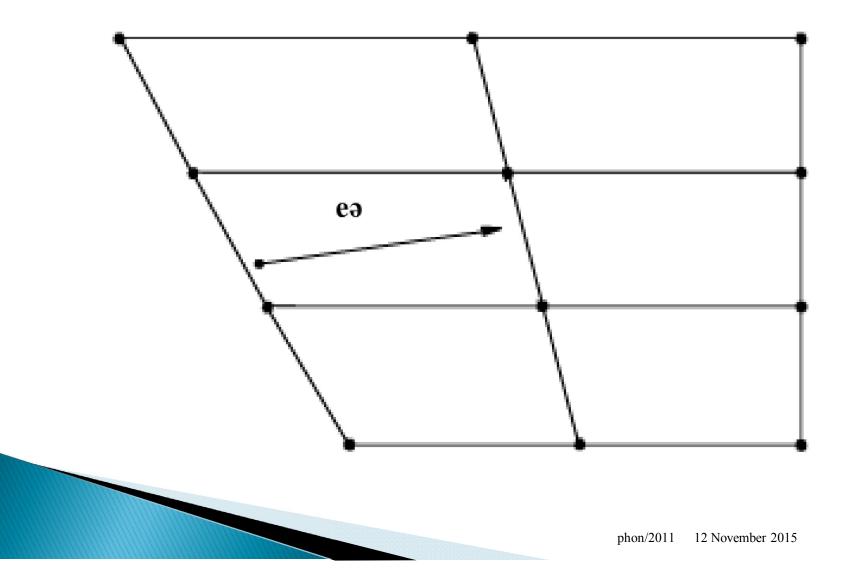
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CENTRING GROUP

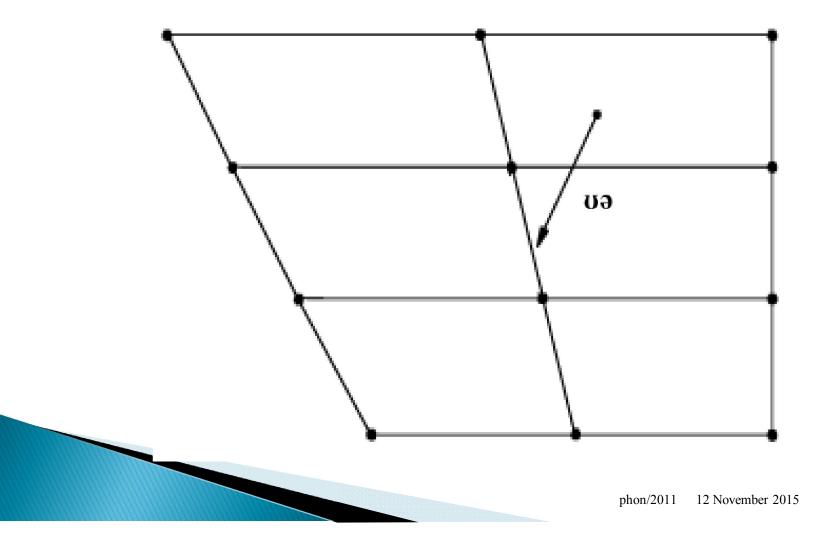
To start with the centring group, we have the most common, that of 'clear', 'deer', 'here', 'wierd':



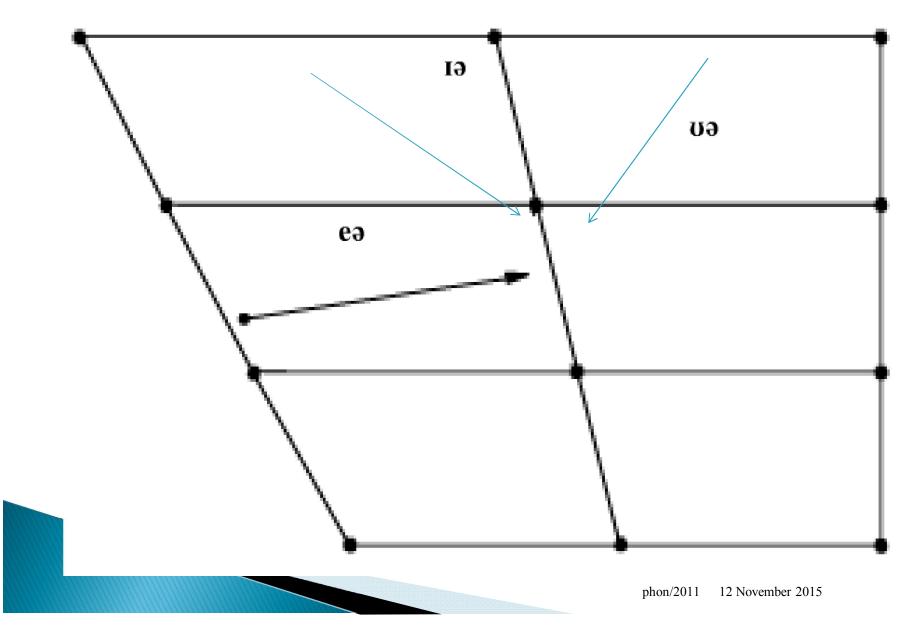
Then 'air', 'where', wear', 'care', 'heir':



Finally, there is a diphthong which is quite rare and is often realised as /uə/ - 'tour', 'poor':



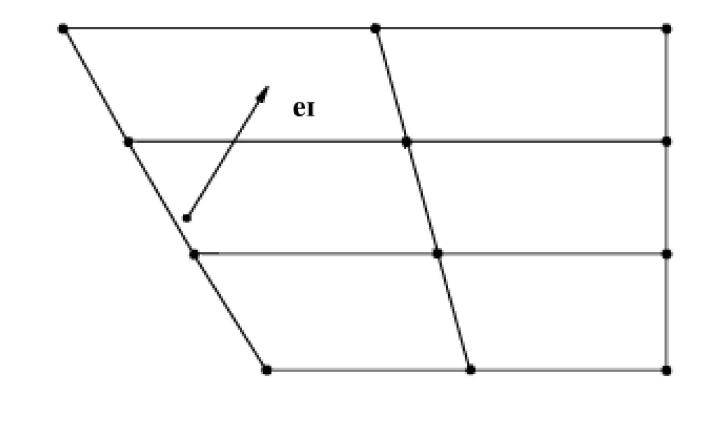
CENTRING DIPHTHONGS



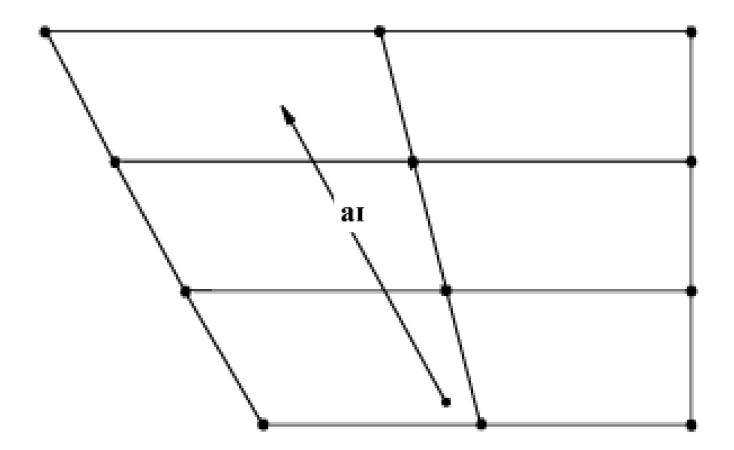
23

Closing Group

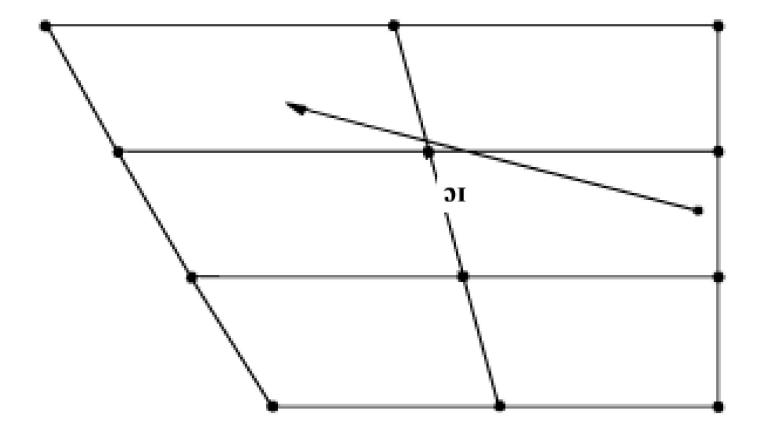
... the 'pay', 'made', 'maid', 'reign', 'obey', sound:



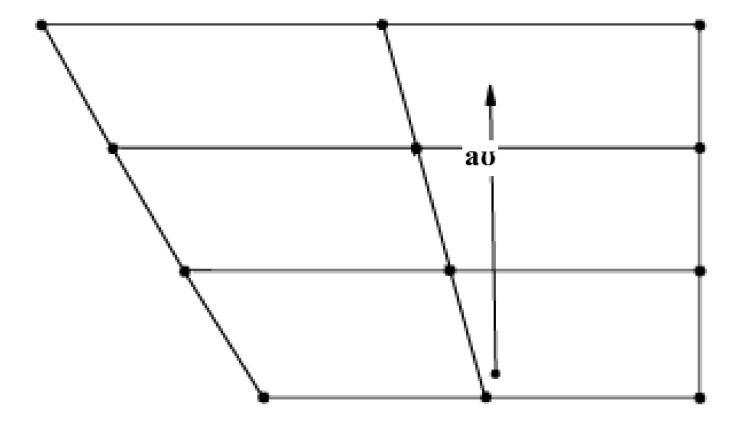
Then we have the 'l', 'my', 'tie', 'sigh', 'either', 'eye', 'Thai', sound:



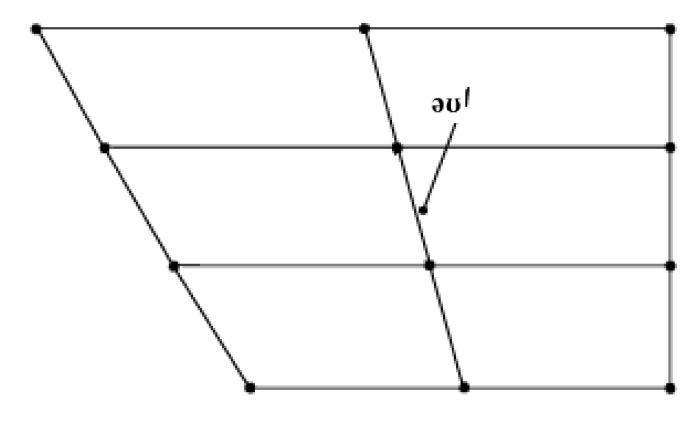
Then there is 'boy', 'joy', 'choice':

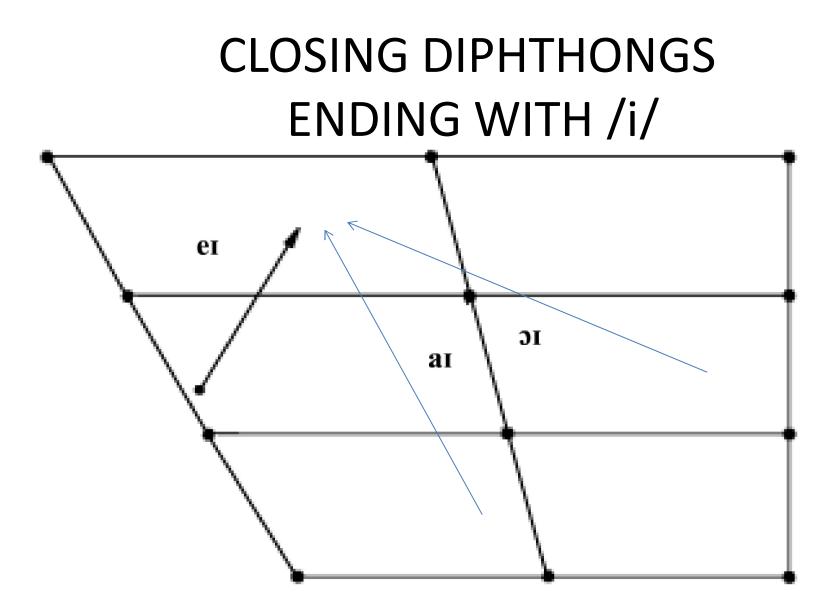


Then 'down', 'loud':

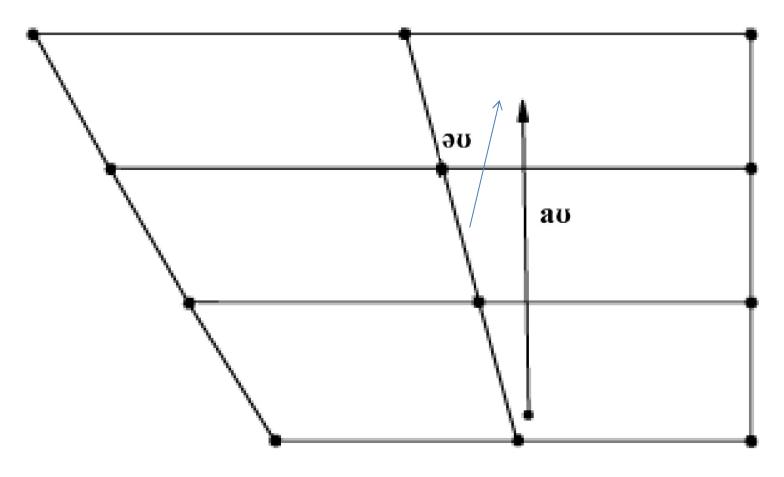


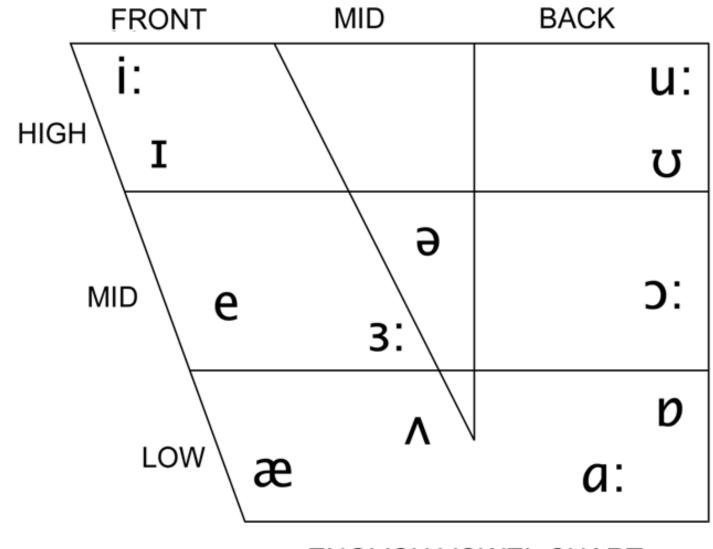
To end the closing group, the most common diphthong in English, that of 'no', 'know', 'bone', 'foam', 'though', 'don't', 'foe':





CLOSING DIPHTHONGS ENDING WITH /u/





ENGLISH VOWEL CHART

VOWE	L NAME	VOWEL	NAME
/i:/	High front vowel	$/\Lambda/$	Low mid vowel
/I/	High-mid front vowel	/u:/	High back vowel
/e/	Mid front vowel	\ 0 \	High-mid back vowel
/æ/	Low front vowel	/ɔ:/	Mid back vowel
/ə/	Mid mid vowel	/ɒ/	Mid-low back vowel
/3:/	Mid-low mid vowel	/a:/	Low back vowel