COURSE TITLE: BASIC PHONETICS AND ENGLISH PHONOLOGY

TOPIC: VOWELS

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INTRODUCTION

- **Vowel sounds** are articulated without complete closure in the oral cavity and,
- without sufficient narrowing to create the friction characteristic of consonants.
- They are produced by passing air through different shapes of the mouth,
- with different positions of the tongue and lips, and—unlike consonants—
- with the airstream relatively **unobstructed** by narrow passages except at the glottis;
- hence; a free flow of air.

INTRODUCTION

- Vowels can’t be described in the same way as consonants.
- For vowels there’s always considerable space between the articulators so that in terms of manner of articulation, all vowels are approximants.
- Place of articulation can’t be used
- we can only distinguish broadly whether the front, centre or back of the tongue is raised towards the roof of the mouth.

- The variable of voicing is of little help.
- Vowels are typically voiced, so that there are no voiced/ voiceless.
- Another means of description, namely acoustic data, and
- acoustic phoneticians have now made enormous advances in this area.
- But obtaining such information and interpreting it still involves considerable time and effort (X-ray technology).

- The most generally used description of vowel sounds is based on-
- 1 Tongue shape
- 2 Lip shape
- 3 Whether tongue and/or lip shape are held constant or undergo change (i.e. is the vowel a *steady-state vowel* or is it a *diphthong*?)
- 5 Duration- a non-physical variable which operates in a large number of languages:
- In pronouncing the following words, you will realize that English has many more than five vowels: *peat*, *pit*, *pate*, *put*, *putt*, *poke*, *pot*, *pout*, *pork*, *pike*, *pool*, *part*, and *port*.

Exercise 1

Say the English vowel /a:/, as in palm. Put your finger in your mouth. Now say the vowel /i:/ (as in fleece). Feel inside your mouth again. Look in a mirror and see how the front of the tongue lowers from being close to the roof of the mouth for /I:/ to being far away for /a:/. Usually, doctors ask you to say 'ah' when they want to see inside your mouth; the tongue is at its lowest when you say /a:/.

Now say these English vowels: /i:/, as in fleece,, /æ/, as in trap. Can you feel the tongue moving down? Then say them in reverse order: /æ/, /i:/. Can you feel the tongue moving up?

(Adapted from Collins, B. & Mees, I. M. (2013). *Practical phonetics and phonology: A resource book for students*. London: Routledge).

CARDINAL VOWELS

- These **cardinal vowels** are a standard reference system, and people being trained in phonetics at an advanced level have to learn to make them accurately and;
- recognize them correctly.
- If you learn the cardinal vowels, you are not learning to make English sounds,
- but you are learning about the range of vowels that the human vocal apparatus can make,
- and also learning a useful way of describing, classifying and comparing vowels

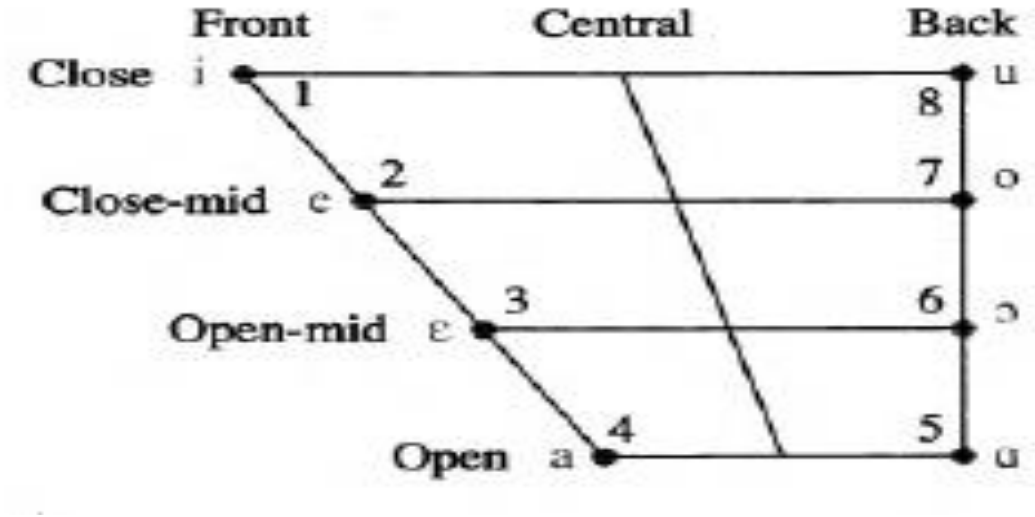
Vowel Height and Frontness

- Vowels are characterized by the position of the tongue and the relative rounding of the lips.
- For that reason and partly on the basis of auditory perception, we refer to vowels as *high* or *low* and *front* or *back*.
- We also consider whether the lips are *rounded* (as for *boot*) or *nonrounded(unrounded)* (as for *bit*).

- Figure 1 indicates the relationship of the English vowels to one another and the approximate positions of the tongue during their articulation.
- It has become traditional to locate cardinal vowels on a four-sided figure; the design used here is the one recommended by:
- **International Phonetic Association**

PRIMARY CARDINAL VOWELS

Diagram consisting primary cardinal vowels.



(Figure 1: Roach, P. (2009). *English phonetics and phonology*. London: Cambridge University Press).

CARDINAL VOWELS

- Cardinal vowel no. 1 has the symbol [i],
- the vowel which is as close and as front as it is possible to make a vowel without obstructing the flow of air enough to produce friction noise;
- friction noise is the hissing sound that one hears in consonants like s or f.
- Cardinal vowel no. 5 has the symbol [a] and is defined as the most open and back vowel that it is possible to make.

CARDINAL VOWELS

- Cardinal vowel no. 8 [u] is fully close and back and no. 4 [a] is fully open and front.
- After establishing these extreme points, it is possible to put in intermediate points (vowels no. 2, 3, 6 and 7).
- It is useful to think of the cardinal vowel framework like a map of an area or country that you are interested in.
- If the map is to be useful to you it must cover all the area; but if it covers the whole area of interest it must inevitably go a little way beyond that and include some places that you might never want to go to.
- When you are familiar with these extreme vowels, you have learned a way of describing, classifying and comparing vowels. For example,
- we can say that the English vowel [æ] (the vowel in 'cat') is not as open as cardinal vowel no. 4 [a].

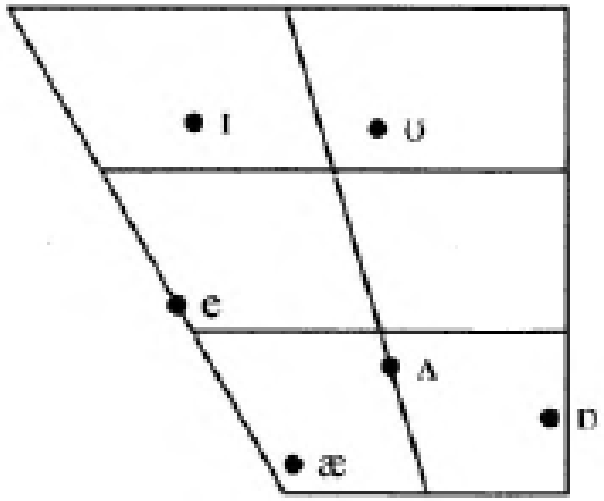
LIP-POSITION

- Three possibilities to be considered:
- i) **Rounded,** where the corners of the lips are brought towards each other and the lips pushed forwards. This is most clearly seen in cardinal vowel no. 8 [u].
- ii) **Spread,** with the corners of the lips moved away from each other, as for a smile. This is most clearly seen in cardinal vowel no. 1 [i].
- iii) **Neutral,** where the lips are not noticeably rounded or spread. The noise most English people make when they are hesitating (written er5) has neutral lip position.

ENGLISH SHORT VOWELS

- English has a large number of vowel sounds; the first ones to be examined are short vowels.
- The symbols for these short vowels are: i,e,,æ, ʌ, ɒ, ʊ. Short vowels are only *relatively* short;
- vowels can have quite different lengths in different contexts.
- Each vowel is described in relation to the cardinal vowels.

Diagram of the short vowels



Roach, P. (2009). *English phonetics and phonology*. London: Cambridge University Press.

- ɪ (example words: ‘bit’, ‘pin’, ‘fish’) The diagram shows that, though this vowel is in the close front area, compared with cardinal vowel no. 1 [i] it is more open, and nearer in to the centre.
- The lips are slightly spread,
- e (example words: ‘bet’, ‘men’, ‘yes’) This is a front vowel between cardinal vowel no. 2 and no. 3
- The Lips are slightly spread,
- (example words: ‘bat’, ‘man’, ‘gas’) This vowel is front, but not quite as open as
- cardinal vowel no. 4 [a].
- The lips are slightly spread.

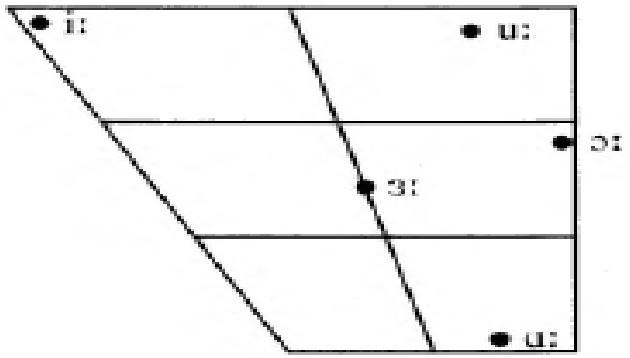
- ʌ (example words: ‘cut’, ‘come’, ‘rush’)
- A central vowel, and the diagram
- shows that it is more open than the open-mid tongue height.
- The lip position is neutral.
- ɒ (example words: ‘pot’, ‘gone’, ‘cross’)
- This vowel is not quite frilly back, and between open-mid and open in tongue height. The lips are slightly rounded,
- ʊ (example words: ‘put’, ‘pull’, ‘push’)
- The nearest cardinal vowel is no. 8 [u], but it can be seen that [ʊ] is more open and nearer to central.
- The lips are rounded.

ENGLISH LONG VOWELS

- There is one other short vowel, for which the symbol is a.
- This central vowel - which is called **schwa -** is a very familiar sound in English;
- it is heard in the first syllable of the words: about', 'oppose', 'perhaps.
- These vowels which tend to be longer than the short vowels in similar contexts.
- "in similar contexts" because, the length of all English vowel sounds varies very much according to their context (such as the type of sound that follows them) and the presence or absence of stress.
- These vowels tend to be long, the symbols consist of one vowel symbol plus a length mark made of two dots :. Thus we have i:, ɜː i:ɔː ɑː, u:

LONG VOWELS

Diagram of long vowels



Roach, P. (2009). *English phonetics and phonology.* London: Cambridge University Press.

LONG VOWELS

- i: (example words: ‘beat’, ‘mean’, ‘peace’) This vowel is nearer to cardinal vowel no.
- 1 [i] (i.e. it is closer and more front) than is the short vowel o f‘bid’, ‘pin’, ‘fish’

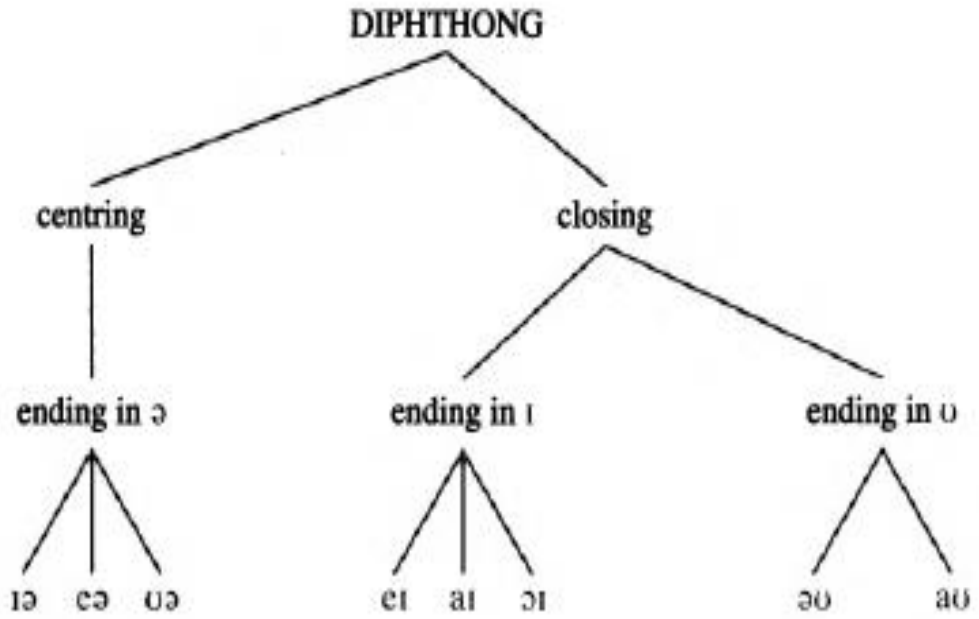
Although the tongue shape is not much different from cardinal vowel no. 1, the lips are only slightly spread and this results in a rather different vowel quality.

- 3: (example words: ‘bird’, ‘fern’, ‘purse’)
- This is a mid-central vowel which is used in most English accents as a hesitation sound
- The lip position is neutral,

- ɑ: (example words: ‘card’, ‘half’, ‘pass’) This is an open vowel in the region of cardinal
- vowel no. 5 [a], but not as back as this.
- The lip position is neutral,
- ɔ: (example words: ‘board’, ‘torn’, ‘horse’)
- The tongue height for this vowel is between cardinal vowel no. 6 [ɔ] and no. 7 [o], and closer to the latter. This
- vowel is almost fully back and has quite strong lip-rounding,
- u: (example words: ‘food’, ‘soon’, ‘loose’) The nearest cardinal vowel to this is no. 8 [u], but BBC u: is much less back and less close;
- while the lips are only moderately rounded.

DIPHTHONGS

- Diphthongs - sounds which consist of a movement or glide from one vowel to another.
- A vowel which remains constant and does not glide is called a **pure vowel/monothongs**
- In terms of length, diphthongs are similar to the long vowels described above,
- the first part is much longer and stronger than the second part;
- for example, most of the diphthong ai (as in the words ‘eye’, ‘I’) consists of the a vowel, and
- about the last quarter of the diphthong does the glide to i become noticeable.
- As the glide to i happens, the loudness of the sound decreases. As a result, the i part is shorter and quieter.



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Centring diphthongs

- The centring diphthongs glide towards the (schwa) vowel, as the symbols indicate.
- ɪə (example words: ‘beard’, weird’, ‘fierce’)
- The starting point is a little closer than i in ‘bit’, ‘bin’,
- e (example words: ‘aired’, ‘cairn’, ‘scarce’)
- This diphthong begins with a vowel sound that is more open than the [e] of ‘get’, ‘men’.
- ʊə moored, tour, lure

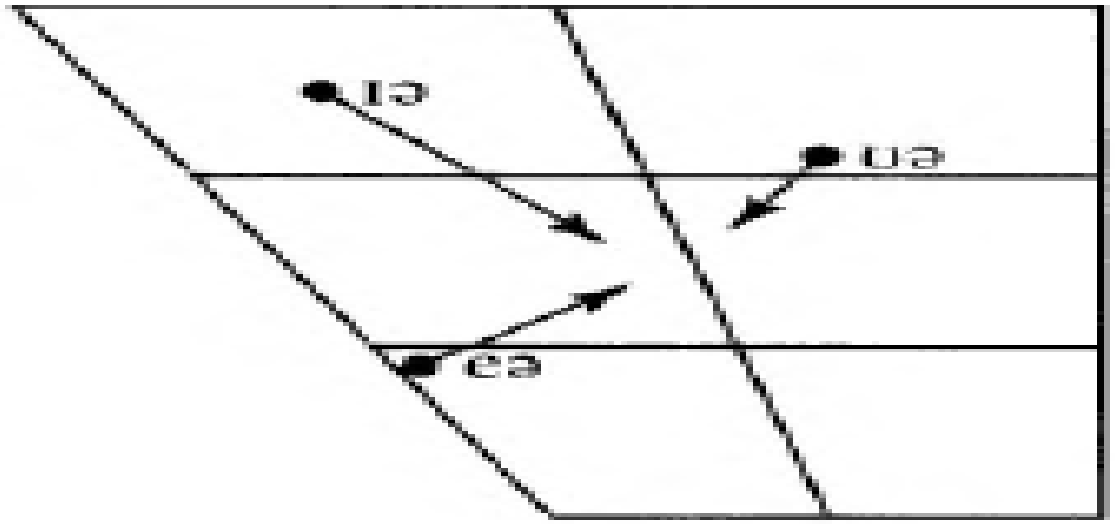
Closing diphthongs

- The closing diphthongs have the characteristic that they all end with a glide towards a closer vowel.
- Because the second part of the diphthong is weak, they often do not reach a position that could be called close.
- A glide form a relatively more open towards a relatively closer vowel is produced.
- Three of the diphthongs glide towards I -

- ei (example words: ‘paid’, ‘pain’, ‘face’) The starting point is the same as the e of ‘get’, ‘men’,
- ai (example words: ‘tide’, ‘time’, ‘nice’)
- This diphthong begins with an open vowel which is between front and back;
- it is quite similar to the ʌ of the words ‘cut’, ‘bun’,
- ɔi (example words: ‘void’, ‘loin’, ‘voice’)
- The first part of this diphthong is slightly more open than o: in ‘ought’, ‘born’.
- Two diphthongs glide towards u,
- the tongue moves closer to the roof of the mouth there is at the same time a rounding movement of the lips.
- This movement is not a large one, again because the second part of the diphthong is weak.

- əʊ(example words: ‘load’, ‘home’, ‘most’)
- The vowel position for the beginning of this is the same as for the “schwa” vowel a,
- The lips may be slightly rounded in anticipation of the glide towards ʊ for which there is quite noticeable lip-rounding,
- aʊ (example words: ‘loud’, ‘gown’, ‘house’)
- Since this is an open vowel, a glide to ʊ would necessitate a large movement,
- The tongue often does not reach the ʊ position. There is only slight lip-rounding.

Centring diphthongs



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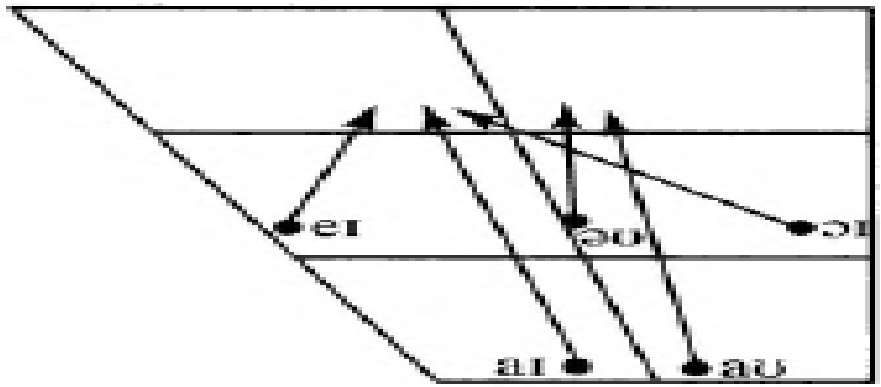
Closing dipthongs



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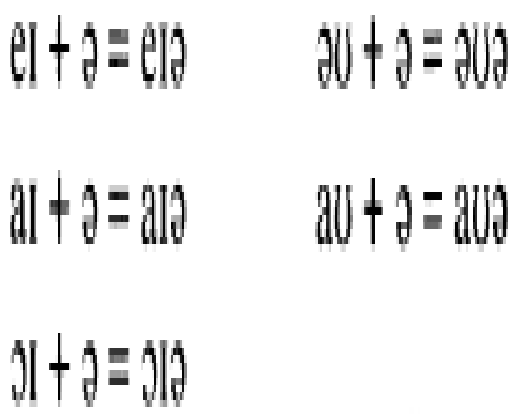
TRIPHTHONGS

- A triphthong is a glide from one vowel to another and then to a third, all produced rapidly and without interruption.
- For example,
- a careful pronunciation of the word ‘hour’ begins with a vowel quality similar to a:,
- goes on to a glide towards the back close rounded area ʊ then
- ends with a mid-central vowel (schwa, ə).



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Tenseness

- Languages may make a distinction between tense and lax vowels.
- Lax vowels tend to be shorter and do not occur at the end of a stressed syllable;
- they also tend to be more centralized than the nearest tense vowel.
- The contrast between the [i] of peat and the [ɪ] of pit is in part a tense/lax contrast;
- likewise, for the vowels in bait/bet and cooed/could.
- Lax vowels don't end a syllable (we have [pi] 'pea' but not [pɪ] except preceding a consonant, as in [pɪk] pick or [pɪt] pit);
- they are shorter than their corresponding tense vowels and more centralized in the mouth.

- Thus English has the lax vowels [ɪ ɛ ʊ] as in pit, pet, put, and they appear closer to the center on the vowel chart,
- representing their greater centralization compared to their tense counterparts.
- The corresponding tense vowels are [i e u] as in beat, bait, boot, and in each case they appear more to the periphery of the vowel chart than the corresponding lax vowel.
- The vowels [æ ʌ] are lax and do not have corresponding tense vowels.

REFERENCES

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