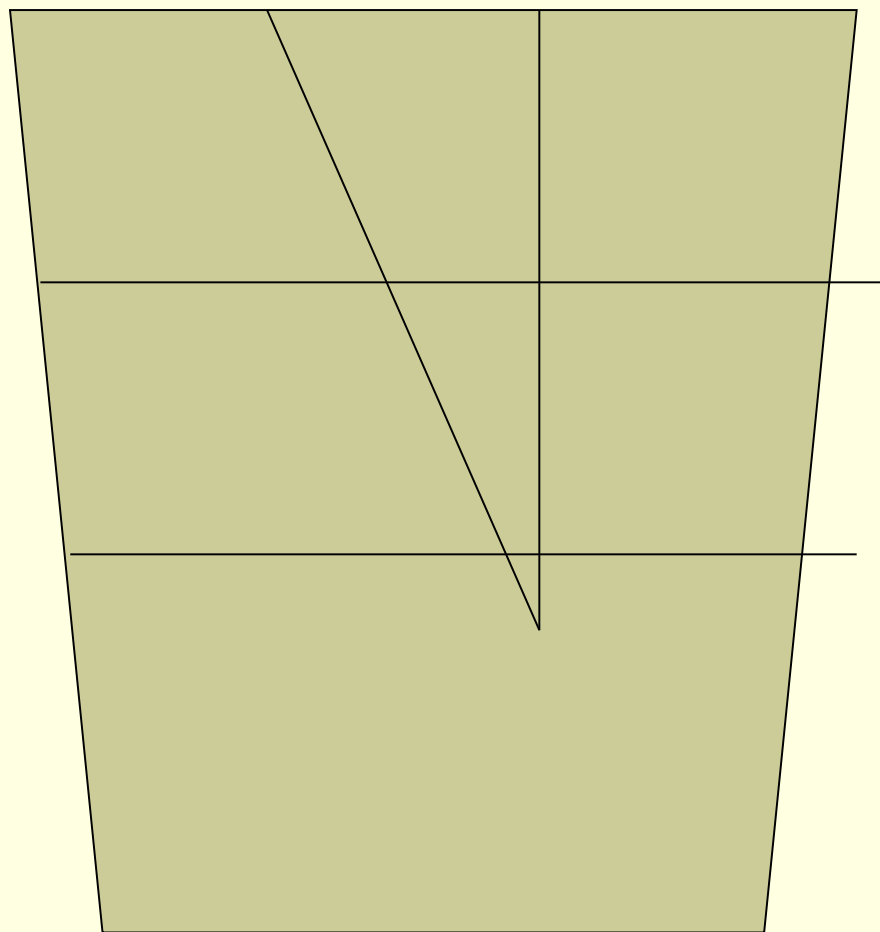# HANDOUT 5: THE CARDINAL VOWELS.

The Cardinal Vowels System.

1. Methods of identifying English vowels.

- Vowels can be classified in articulatory terms on the basis of three dimensions of classification:
  - (a) Highest point of the tongue on the vertical axis: *close*, *mid-close*, *mid-open*, *open*.
  - (b) Highest point of the tongue on the horizontal axis: *front*, *central* and *back*.
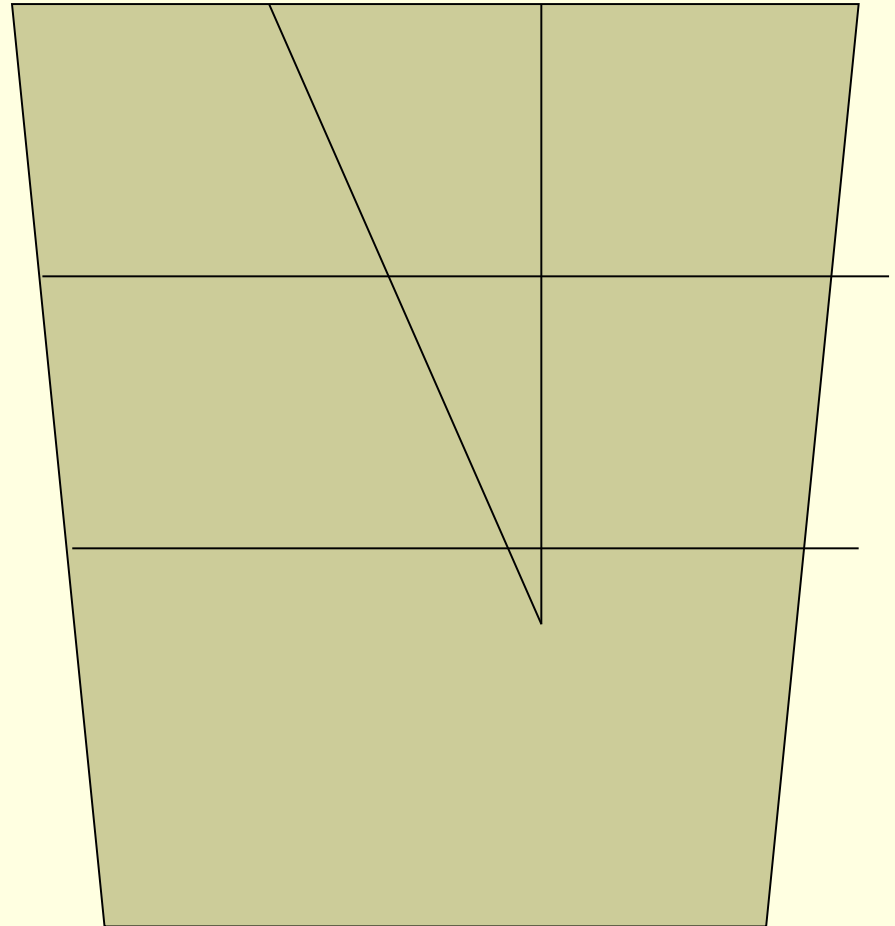 - (c) The posture of the lips: *spread*, *rounded* and *unrounded*.

2. The system of Cardinal vowels.

- The idea of a *system of reference points* of this sort was originally put forward by A. J. Ellis in 1844 and the word *cardinal* itself was first used in connexion with such a system by A. M. Bell in 1867.

- However, the system did not become generally available until Daniel Jones developed one in connexion with his teaching at University College, London, and made it public about the time of the first World War. Since then it has been widely accepted and used by researchers in Acoustic Phonetics.

- A Cardinal Vowel is a fixed and unchanging reference point, established within the total range of vowel quality, to which any other sound can be directly related.

- A number of such reference points constitutes a system of *Cardinal Vowels*, and any vowel in any language can be identified by being placed within the system.
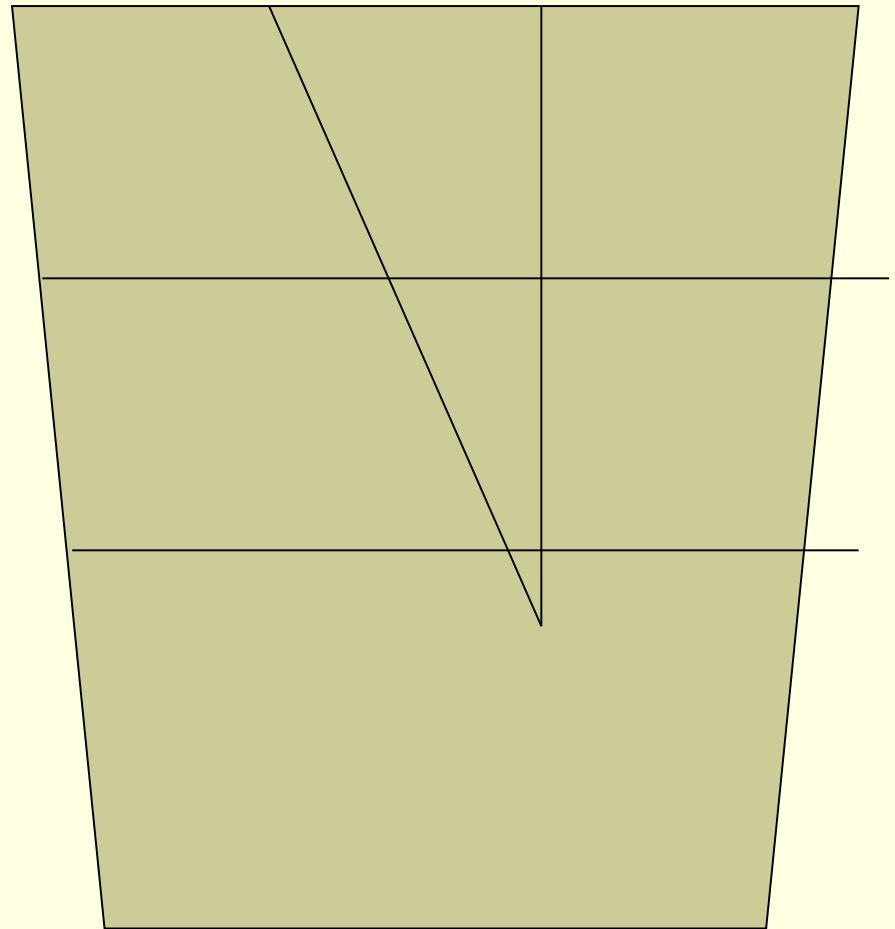
3. Primary cardinal vowels.

- Eight cardinal vowels form the core of the Daniel Jones system (*Primary cardinal vowels*).

- The primary cardinal vowels are not based on the vowels of any existing language (*General phonetic system*).
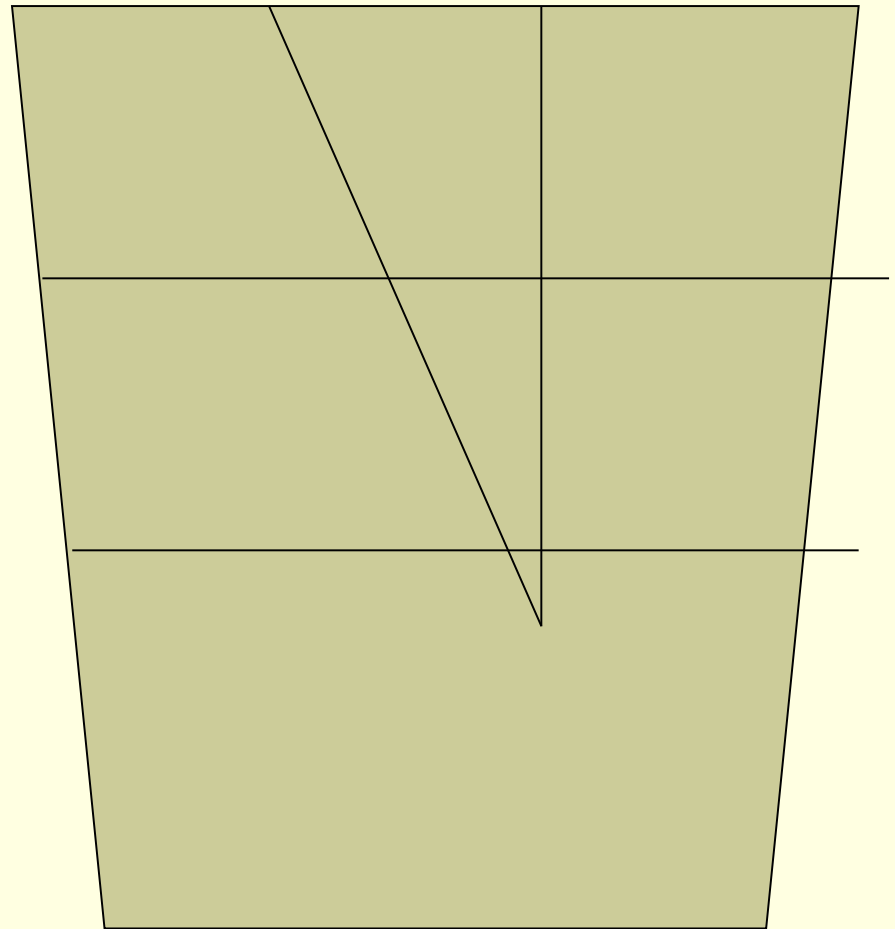
3. Primary cardinal vowels.

- The most convenient way of identifying cardinal vowels is by giving a symbol and a number to each one.

- The basis of the system is physiological: equi-distant points were established from the highest to the lowest position of the front/back of the tongue and viceversa.

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3. Secondary cardinal vowels.

- A secondary series can be obtained by reversing the lip position, e.g. close lip-rounding applied to the [i] tongue position, or lip spreading applied to the [u] position.

STUDY QUESTIONS

- In articulatory terms, which dimensions help us to classify vowel qualities?
- Which term labels do these dimensions provide us with?
- Which are the weaknesses of this system of identification?
- What is a cardinal vowel?
- What is the use of the Cardinal Vowel System?
- How can primary cardinal vowels be obtained?
- How can secondary cardinal vowels be obtained?