

# Introduction to English Linguistics

## 3. Phonetics and Phonology II 14 November 2019

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## Phonetics

- **Phonetics:** The study of speech sounds.
  - Transcription: The **International Phonetic Alphabet** (IPA).
  - **Articulatory phonetics:** How speech sounds are produced.
  - Consonant production can be described in terms of three properties:
    - **V**oicing (vibration of the vocal cords).
    - **P**lace of articulation (where the airflow is obstructed).
    - **M**anner of articulation (how the airflow is obstructed).
- = VPM

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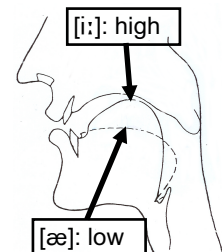
## Describing sounds – Vowels

- Vowels can be distinguished along five dimensions:
  - Tongue position.
  - Length.
  - Lip rounding.
  - Nasality.
  - Monophthong vs. Diphthong.

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## Tongue position – Height

- Tongue height: The degree of raising of the tongue.
- E.g.: [æ] – [e] – [i:]  
(*bad* vs. *bed* vs. *bead*)  
low – mid – high



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## Tongue position – Highest point

- Another criterion: Which part of the tongue is highest in the production of the vowel?
- [e] – [ɜ:] – [ɔ:]  
(*bed* vs. *bird* vs. *bought*)  
front – central – back
- Each vowel can be described in terms of the features *high-mid-low* and *front-central-back*.

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## The production of vowels

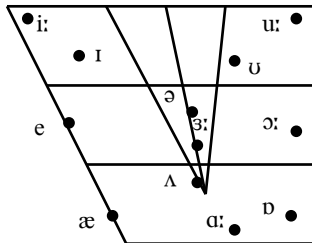


Source: <http://phonetics.ucla.edu/vowels/chapter11/tongue.html>

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## The vowel chart – English vowels

- The production of vowels is schematically represented in the **vowel chart**.



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## Vowels

- A wide range of different vowel sounds can be produced.
- Pygmalion* (beginning of act two):  
*Higgins* [...] Tired of listening to sounds?  
*Pickering* Yes. It's a fearful strain. I rather fancied myself because I can produce twenty-four distinct vowel sounds: but your hundred and thirty beat me. I can't hear a bit of difference between most of them.

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## Length, lip rounding, nasality

- Length.**  
[ʊ] vs. [u:] (*full* vs. *fool*).
- Lip rounding.**  
[u:] vs. [i:]
- Nasality.**  
Generally not relevant for RP. But vowels may be slightly nasalized when followed by a nasal consonant (=coarticulation).

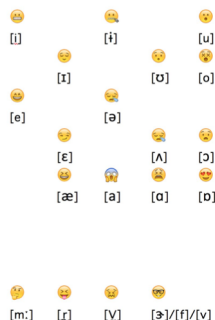
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## Monophthong vs. diphthong

- The quality of a vowel can change within one syllable: Diphthong.
- E.g.: [bɔɪ] (*boy*)
- Description in terms of the changes related to the features introduced so far.  
 ɔɪ = Low back rounded to high front unrounded.

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## The vowel chart, modern style



(Source: <http://www.life.tumblr.com/post/147272930938/emoji-as-sounds-and-the-ice>)

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## Introduction to English Linguistics

### Phonology

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## Phonology

- Phonetics: The study of speech sounds.
- Phonology: The study of sound patterns of language (the sound system of language).

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## Sounds within a system

- Sound contrasts that have semantic effects:  
[k] vs. [t] → call vs. tall (different meaning)
- Sound contrasts that have no semantic effects:  
E.g. kitchen cupboard, car key  
IPA: [k] in *cupboard*, *car*; [c] in *kitchen*, *key*.
  - Contrast is never the source of a meaning difference in English.
  - Occurrence predictable:  
[k] before back vowels; [c] before front vowels.  
→ **complementary distribution**.

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## Phoneme vs. phone

- [k]/[c]: The same but different.
- **Phoneme**: /k/.
- Phonetic realization: **Phone**. E.g. [k].
- Two realizations of the same phoneme: **allophones**. E.g. [k], [c].
- Cf. writing: one letter, different realizations – *a*, *ä*, *α*, *α*, *α*, *Α*, *Λ* etc.

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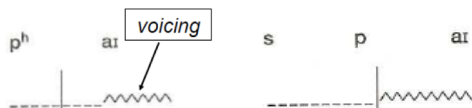
## Allophony

- Another example: Aspiration.
  - Cf. English *key* vs. French *qui*.
  - *pill/till/kill*: aspiration [p<sup>h</sup>], [t<sup>h</sup>], [c<sup>h</sup>].
  - *spill/still/skill*: no aspiration [p], [t], [c].
  - Aspiration rule: Aspirate word-initially (to be revised).
  - Aspiration vs. absence of aspiration:
    - *peace talks* vs. *pea stalks*
    - *loose pills* vs. *Lou spills (it)*
- → The phoneme /k/ has four allophones: [k], [c], [k<sup>h</sup>], [c<sup>h</sup>].

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## Aspiration

- Aspiration from an **acoustic** point of view: Delay in the onset of voicing.



- E.g. Khmer: [təp] ('to support') vs. [t<sup>h</sup>əp] ('to be suffocated').  
Meaning difference, two phonemes: /t/, /t<sup>h</sup>/.

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## Allophony: //

- Another case of allophony: Velarization of //.  
*lull*, *lift*
- Clear l [l] vs. dark l [ɫ]: Two allophones of //.
- Velarization rule (to be revised):
  - [l] before vowel.
  - [ɫ] after vowel.

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## Phoneme or allophone?

- Tests for the distinction between phonemes and allophones:
  - *Opposition: minimal pairs.*  
Substitution of sound A by sound B.
    - Meaning difference → Different phonemes A and B.
    - No meaning difference → Two allophones of the same phoneme.
  - *Complementary distribution.*  
Mutually exclusive environments: allophones. Cf. e.g. aspiration.

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## Phoneme or allophone?

- Sometimes: *Free variation.*  
No complementary distribution but also no meaning difference: a kind of allophone.
  - *butter, bottle*: [t] vs. [ʔ] vs. [r]
  - *rope, pride*: [ɹ] vs. [r]
- N.B. Variation is free from a phonological point of view, but not from a sociolinguistic point of view (e.g. geographic variation, style): Sociolinguistically determined allophony.

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## Phonological features

- Phonemes as the smallest units of the phonological system?  
No, phonological features.
- Consonants:
  - [+/-voiced].
  - Place of articulation ([+alveolar], [+bilabial] etc.).
  - Manner of articulation ([+plosive], [+nasal] etc.).
- Vowels:
  - The two dimensions of the vowel chart ([+high], [+back]).
  - Length ([+/-long]).
- Distinctive vs. redundant features.
  - E.g. /h/: [+glottal].

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## Phonological features

- Advantages of considering features as the minimal units in phonology:
  - 1) Features define **oppositions** between phonemes.
  - 2) Aspects of speech production: slips of the tongue. E.g. spoonerisms:
    - *Fighting a liar*. (intended: *Lighting a fire*)
    - *Is the bean dizzy?* (intended: *Is the Dean busy?*)
    - *Go and shake a tower*. (intended: *Go and take a shower*.)

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## Phonological features

Spoonerisms (contd.).

A different type:

- *pig and vat* (intended: *big and fat*)  
Permutation of the feature [+/-voiced].
- *Cedars of Lebanon* (intended: *Cedars of Lebanon*)  
Permutation of the features [+nasal] and [+plosive].

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