PHONETICS OF ENGLISH

PHONEME, ALLOPHONE, DISTRIBUTION, DISTINCTIVE FEATURES

LECTURE 3
PART I

Recap

- Speech organs
- Speech production, hearing, perception
- Teaching pronunciation – methods and techniques

Overview

Phonemes and allophones

Types of distribution of speech sounds:
1. Complementary distribution
2. Contrastive distribution
3. Free variation

Minimal pair test

Distinctive features

Crucial concept 1: Phoneme

- When two sounds contrast they are part of different ***phonemes***.
  - /p/ and /b/ are different phonemes
- Phonemes are abstract mental units that represent sounds.
- Be careful! Phonemes are *not* sounds themselves, they are mental units representing sounds!!!

Phoneme revisited

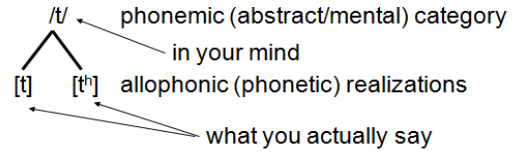
- Phoneme: any of the perceptually distinct units of sound in a specified language that distinguish one word from another, for example *p*, *b*, *d*, and *t* in the English words *pad*, *pat*, *bad*, and *bat*.
- The smallest unit of speech that can be used to make one word different from another word.

Crucial Concept 2: Allophones

- Phonetic forms that don't contrast (make a difference in meaning) are called ***allophones***
  - [t] and [t^h] are allophones of the phoneme /t/
- Allophones are the various pronunciations of a phoneme.

Phonemes & Allophones

- Phonemes are written between / / brackets
- Allophones are written between [ ] brackets



Tom [tʰ] vs. spo**tt**ing [t]

Another example

The /l/ in:

***like* /laik/**

and in

***pill* /pil/**

are phonetically distinct. Phonetically speaking, the l in *pill* is velarised, which means that the back of the tongue is raised against the velum. The l of *like* does not have this quality.

Sounds in context

- The pronunciation of a phoneme is often determined by the other sounds around it.
- The nearby sounds around a phoneme are called the ***environment*** of that phoneme.
- E.g. in the English word *pat* /*p* æ t /, /p t/ is the environment for æ.

- A *phoneme* can have several *allophones*.
- *Allophones* of a single phoneme are not contrastive with each other.

  (Contrastive sounds belong to different phonemes)
- *Allophones* are in *complementary distribution* with each other (or sometimes, in *free variation*)

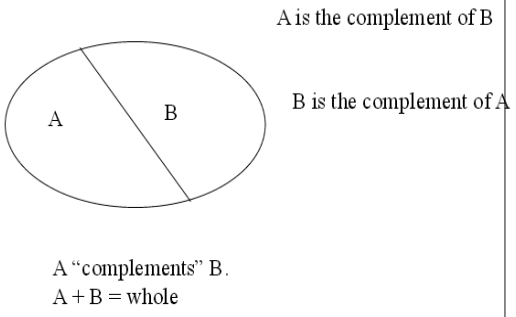
Free variation - is the rare phenomenon of two (or more) sounds or forms appearing in the same environment without a change in meaning and without being considered incorrect by native speakers – examples: the word *economics* may be pronounced with /i/ or /ɛ/ in the first syllable;

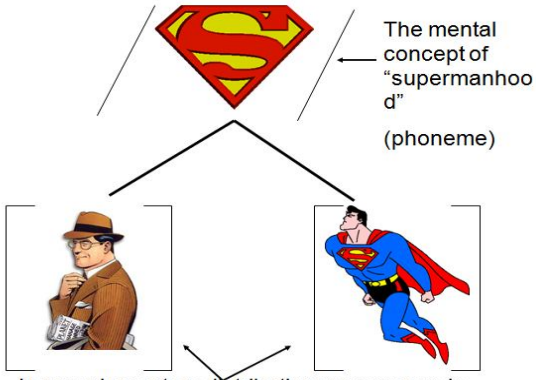
Complementary distribution

'Complement': that which completes
(NB: not 'compliment', not 'complimentary distribution')

- two phones are in complementary distribution when there is a specification of environments such that they don't occur in the same environment

Concept of "Complement"





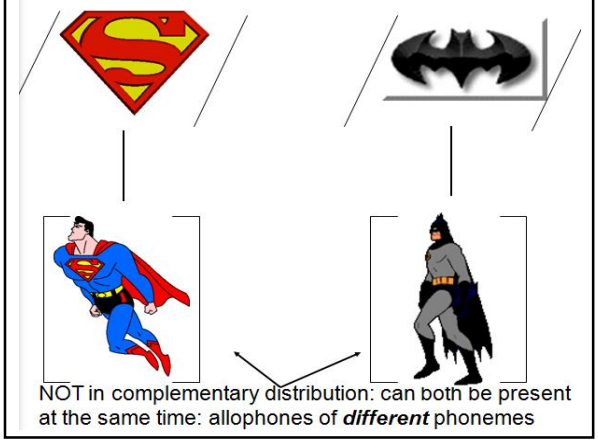
Complementary Distribution

- In English, [p] and [p^h] are allophones of the same phoneme. They are in complementary distribution with each other.
- Why?

- Are /n/ and /m/ allophones of the same phoneme in English?
- Are they contrastive or in complementary distribution with each other?

Contrastive distribution

- Two sounds are in **contrastive distribution** if they aren't in complementary distribution.
- Contrastive distribution is the relationship between two different elements, where both elements are found in the same environment **with a change in meaning**.



- How do we know if the two sounds are in complementary distribution (allophones of the same phoneme) or in contrastive distribution (two distinct phonemes)?

WE PERFORM THE MINIMAL PAIR TEST.

Minimal Pairs

- To determine if two sounds are contrastive, we look for minimal pairs.
- A *minimal pair* is two words...
  1. with the same number of sound segments, and
  2. which differ in one segment only, and
  3. which have different meanings

  E.g. *bean* /biːn/ vs. *mean* /miːn/ , *mud* /mʌd/ vs. *thud* /θʌd/

  Thus, /b/ and /m/ are contrastive; so are /m/ and /θ/
- Contrastive sounds belong to different *phonemes*.

Minimal Pairs

- Why is *bumping* *[bʌmpɪŋ] vs. *bumming* [bʌmɪŋ] *not* a minimal pair?

Distinctive Features

- Features are binary (+ or - values)
- Each speech sound may be described as a "bundle" of features
- Each member of every pair of phones is distinguished from the other member by at least one feature value
- Features are universal, but a given language may use a subset of features as distinctive

Distinctive features

- A *distinctive feature* is a feature which, when changed, may create minimal pairs.
- Any feature may potentially be distinctive.
- Voicing, [±voice], is a distinctive feature in English, but not in Korean.
  - [p] and [b] are contrastive in English.

Definition: **Distinctive feature is a basic building block of the phoneme – it is any trait that distinguishes one phoneme from another.**

Distinctive Features

	/ p /	/ b /	/m/
Consonantal	+	+	+
Stop (=plosives)	+	+	–
Continuant	–	–	–
Labial	+	+	+
Voiced	–	+	+
Nasal	–	–	+

Distinctive Features

/p / described as a bundle of features

•[-Vocalic]	•[- Low]	•[- Continuant]
•[+Consonantal]	•[- Back]	•[+Tense]
•[-Sonorant]	•[- Rounded]	•[- Voiced]
•[-Coronal]	•[- Distributed]	•[-Strident]
•[+Anterior]	•[- Nasal]	
•[-High]	•[- Lateral]	

•Sonorant - produced with continuous, non-turbulent airflow in the vocal tract; Coronal - produced with two simultaneous articulators; Anterior –produced with an obstruction located in the front of the palato-alveolar region of the mouth; Distributed –produced with a constriction that extends for a considerable distance along the axis of the oral tract; Lateral - produced with the tongue placed in such a way as to prevent the airstream from flowing outward through the centre of the mouth; Strindent - produced by forcing air through a constricted passage.

Study questions

1. Define *phoneme.*
2. Define *allophones.* Provide an example.
3. What is the *phonetic environment*?
4. What are *minimal pairs*? Provide an example.
5. What is *complementary distribution*?
6. What is *contrastive distribution*?
7. How do we know if two sounds are in complementary or contrastive distribution?
8. What is the third type of sound distribution? Define it.
9. What is a *distinctive feature*?
10. What do we use distinctive features for?
11. Distinctive features are binary – what does that mean?