Phonemes and allophones (âm vị và tha âm vị)

Cơ sở âm vi học và ngữ âm học

13/7/12

Review: classification of segments

- Sound waves are continuous, but in many ways we perceive speech in terms of segments.
- Segments can be classified according to the way in which they are produced in the vocal tract.

Segment inventories

- Languages have different inventories of segment types.
- There are two ways in which languages can differ:
 - ► Segment types: the use/non-use of certain phonetic types/dimensions.
 - ► Segment contrasts: differences in the way phonetic dimensions are exploited.

Differences of type (loại hình)

- Certain types of segments are only used by some languages.
 - clicks (Southern African languages)
 - pharyngealised consonants (e.g. Arabic)
 - ► interdental fricatives (e.g. English, Spanish, Greek)
 - ► front rounded vowels (e.g. German, French)
 - ejectives (e.g. Georgian, Quechua)

Differences of contrast (tương phản)

- These differences are conspicuous, but superficial (so luço).
- More fundamental differences occur between what counts as different in a language. This is the concept of contrast (tương phản).

Differences of contrast

English	ba	p	a
Thai	ba	ра	p ^h a

- These languages make different distinctions along the same phonetic dimension.
- Universally, we can talk of a "voiceless bilabial stop"
- But for Thai, it's important to also specify whether it's aspirated or unaspirated.
- In English, it's not quite so important.

Language-specific distinctions

From the point of view of a non-native speaker, many of these distinctions can be extremely subtle.

Polish distinguishes English distinguishes

 $[\varsigma]$ and $[\int]$ [si] and $[\int i]$,

[z] and [3] which may be difficult for

'kasiarz' [kacaf] Greek or Japanese speakers.

Language acquisition

- These differences present difficulties for L2 learners...
- But also for L1 learners:
 - ▶ What are the categories?
 - ▶ What counts as 'different' in my language?

Phonemes (âm vi)

- Contrastive sound categories are called phonemes.
- Phonemes are the smallest units in a language that distinguish word meanings (đơn vị nhỏ nhất được dùng để phân biệt ngữ nghĩa của từ.)
- Phonemes are abstract segments (âm đoạn trừu tượng).

Let me repeat that again

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There are some problems with the idealisation of a phoneme, but the concept is surprisingly useful.

Finding phonemes

- Phonemes are chiefly identified by finding minimal pairs (cặp tương ứng tối thiểu).
- · A minimal pair is a pair of words which
 - 1. differ in meaning and
 - 2. differ in exactly one segment.

Minimal pairs in Vietnamese

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Minimal pairs in English

[d]	[t]	[d]	[t]
dire	tire	do	two
dim	Tim	had	hat
said	set	bend	bent

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dim	Tim	had	hat
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Since we can find minimal pairs differing only between [d] and [t], we say that this difference is contrastive in English (tương phản).

Minimal pairs in English

Minimal pairs in English

Since we can't find any minimal pairs differing only in [p] and $[p^h]$, we conclude these sounds are not contrastive in English.

Why abstraction?

One reason for using phonemes is because their precise phonetic realisation can often be predicted on the basis of

- · social variation
- regional dialect
- phonological environment.

Exercise: phonetic variation

 Say the following words aloud, paying particular attention to the place of articulation of the final sounds:

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Phân bố của hai biến thể là gì?

Exercise: phonetic variation

 Say the following phrases aloud, paying particular attention to the place of articulation of the N sounds:

in a
 in the
 the men think
 the men do

Exercise: phonetic variation

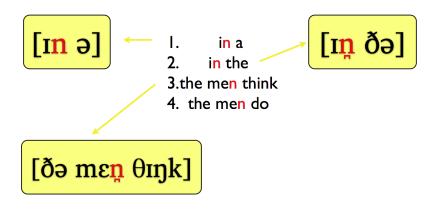
• Say the following phrases aloud, paying particular attention to the place of articulation of the **N** sounds:

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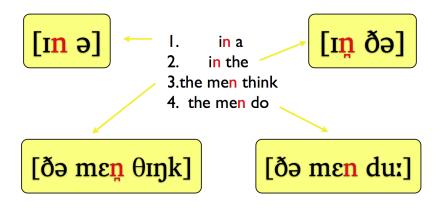
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Systematic phonetic variation

- Much phonetic variation doesn't produce minimal pairs, but is an automatic consequence of the phonetic environment.
- It is systematic and predictable.

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Labiovelars [kp, ŋm]
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Plain velars [k ŋ] occur everywhere else

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Dental [n] occurs before fricatives

Alveolar [n] occurs everywhere else

Complementary distribution

If the phonetic differences between two sounds are systematic and predictable, then they never contrast, because their distributions differ.

- We say these variants are in complementary distribution (phân bố bổ sung).
- The variants of a phoneme are called allophones (tha âm vi).

Complementary distribution

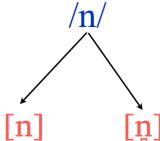
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Sound categories

Phoneme:

Allophones:



Allophonic variation: Korean

In which environment does each variant occur?

[1]			[ɾ]
[kal]	it'll go	[irɯmi]	name
[kɯnɯl]	shade	[kɾi]	road
[ilkop]	seven	[kɯɾəm]	then
[onwlppəm]	tonight	[kariro]	to the street
[pal]	leg	[uri]	we
[pʰal]	arm	[saram]	person

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Japanese /r/

In Japanese the phoneme /r/ has several variants:

alveolar tap (<i>võ</i>)	[r]
palatalised tap	[r ^j]
lateral approximant	[1]

- The different variants do not signal different meanings
- The variation is not predictable from the context.

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In Japanese the phoneme /r/ has several variants:

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- The different variants do not signal different meanings
- The variation is not predictable from the context.

The allophones are not in complementary distribution, but in free variation (biến thể tư do).

Language specificity

- In English, [I] and [I] are phonemes: they can
 distinguish minimal pairs, e.g. leaf [lixf] and reef [IIXF].
- In Japanese, [I] and [r] do not contrast, but their distribution is not predictable: they are allophones in free variation.
- In Korean, [I] and [r] do not contrast either, but their distribution is predictable: they are allophones in complementary distribution.

Goals of phonology

- A major concern of phonology is sorting out the relationship between specific phonetic segments and the abstract mental constructs (the phonemes).
- In Korean, [I] and [r] are fundamentally "the same thing", but each is realised in a different environment.
- Likewise for English [n] and [n]...
- ...or Vietnamese [k] and [kp].

Summary	
 Contrast is the key to understanding phonological systems of languages Every language has a specific inventory of sound categories, or phonemes, distinguished by minimal pairs. Variants of a phoneme are called allophones. 	