

Day 6: Phonology

Ling 200: Introduction to Linguistic Thought

Jonathan North Washington

25 June 2007

1 *Today*

2 *Natural Classes*

3 *Basic Concepts*

- What is Phonology?
- Contrastiveness
- Minimal Pairs
- Phonemes and Allophones
- Complementary Distribution

Today

- Last-minute questions on homework 1, then turn in
- <http://archive.phonetics.ucla.edu/Language/GSW/gsw.html>
- Hand back quiz 2, discuss
- Assign homework 2
- Phonology
 - Transition from phonetics: natural classes
 - Intro
 - Minimal pairs
 - Distribution (Allophones, etc)

Natural Classes

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Definition (Natural Classes)

A group of sounds, which have a particular **feature** (or combination of features) in common, that are treated as a group by the phonology of a language.

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- sibilants: (“hushing sounds”): [s, z, ʃ, ʒ]

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The study of the organisation of speech sounds in a language

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- How they’re distributed

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The study of the organisation of speech sounds in a language

- How they “function”
- How they’re distributed
- (How they pattern cross-linguistically)

Function

Contrastive sounds

Function

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- Function of sounds:

Function

Contrastive sounds

- Function of sounds: to differentiate words

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- Major question of Phonology:

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- Hindi [p^h] / [p]:
 - [p^həl] 'fruit' vs. [pəl] 'moment'

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Two (or more) words that differ only by a single sound in the same position and that have different meanings

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- k/g:

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- s/ʃ: [mɛsi] 'messy' vs. [mɛʃi] 'meshy'
- i/ɪ/ε: [fi:l] 'feel' vs. [fi:l] 'fill' vs. [fɛ:l] 'fell'

Minimal Pairs

Features

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- Whole sounds can contrast

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- So can parts of sounds (i.e., features):

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- So can parts of sounds (i.e., features):
 - Voicing: [tɪl] 'till' vs. [dɪl] 'dill'
 - Place:

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- So can parts of sounds (i.e., features):
 - Voicing: [tɪl] 'till' vs. [dɪl] 'dill'
 - Place: [sʌm] 'sum' vs. [sʌŋ] 'sung'

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 - Voicing: [tɪl] 'till' vs. [dɪl] 'dill'
 - Place: [sʌm] 'sum' vs. [sʌŋ] 'sung'
 - Manner:

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 - Place: [sʌm] 'sum' vs. [sʌŋ] 'sung'
 - Manner: [mɛs] 'mess' vs. [mɛt] 'met'

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Sounds in a minimal pair:

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Sounds in a minimal pair:

- **contrast**

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Sounds in a minimal pair:

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- are **unpredictable** (i.e., must be learned)

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Sounds in a minimal pair:

- **contrast**
- are **unpredictable** (i.e., must be learned)
- belong to different **phonemes**

Phonemes vs. Allophones

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Definition (Phoneme)

A minimal unit of sound that serves to distinguish meaning between words.

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- Phonemes composed of sets of sounds ('allophones'):

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Definition (Allophone)

The different phonetic realizations of a phoneme

Phonemes and Allophones

Allophones of /t/

top

Phonemes and Allophones

Allophones of /t/

top

[t^hap]

Phonemes and Allophones

Allophones of /t/

top
stop

[t^hap]

Phonemes and Allophones

Allophones of /t/

top	[t ^h ap]
stop	[stap]

Phonemes and Allophones

Allophones of /t/

top [t^hap]

stop [stap]

got, eat

Phonemes and Allophones

Allophones of /t/

top	[t ^h ap]
stop	[stap]
got, eat	[gat̚], [it̚]

Phonemes and Allophones

Allophones of /t/

top	[t ^h ap]
stop	[stap]
got, eat	[gat̚], [it̚]
gotten	

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Allophones of /t/

top	[t ^h ap]
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got, eat	[gat̚], [it̚]
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Phonemes and Allophones

Allophones of /t/

top	[t ^h ap]
stop	[stap]
got, eat	[gat̚], [it̚]
gotten	[gaʔŋ]
eater	

Phonemes and Allophones

Allophones of /t/

top	[t ^h ap]
stop	[stap]
got, eat	[gat̚], [it̚]
gotten	[gaʔn̩]
eater	[iɰt̚]

Phonemes and Allophones

Allophones of /t/

top	[t ^h ap]
stop	[stap]
got, eat	[gat̚], [it̚]
gotten	[gaʔŋ]
eater	[iɾ]
got you	

Phonemes and Allophones

Allophones of /t/

top	[t ^h ap]
stop	[stap]
got, eat	[gat̚], [it̚]
gotten	[gaʔŋ]
eater	[iɾ]
got you	[gatʃə]

Phonemes and Allophones

Allophones of /t/

top	[t ^h ap]
stop	[stap]
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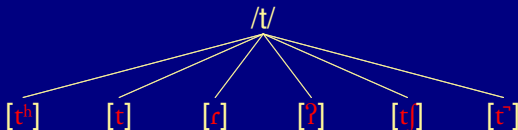
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- Allophones of /t/



Distribution

Contrastive Distribution

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- Contrastive Distribution: contrastive phonemes

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- Contrastive Distribution: contrastive phonemes
- Complementary Distribution: complementary environment

Distribution

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- Contrastive Distribution: contrastive phonemes
- Complementary Distribution: complementary environment

Definition (Contrastive Distribution)

When sounds can occur in the exact same phonetic environment (thereby forming a minimal pair)

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Definition (Contrastive Distribution)

When sounds can occur in the exact same phonetic environment (thereby forming a minimal pair)

- /s/ vs. /z/:

Distribution

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Definition (Contrastive Distribution)

When sounds can occur in the exact same phonetic environment (thereby forming a minimal pair)

- /s/ vs. /z/:
 - Initial:

Distribution

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- Contrastive Distribution: contrastive phonemes
- Complementary Distribution: complementary environment

Definition (Contrastive Distribution)

When sounds can occur in the exact same phonetic environment (thereby forming a minimal pair)

- /s/ vs. /z/:
 - Initial: [su] 'sue', [zu] 'zoo'

Distribution

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- Contrastive Distribution: contrastive phonemes
- Complementary Distribution: complementary environment

Definition (Contrastive Distribution)

When sounds can occur in the exact same phonetic environment (thereby forming a minimal pair)

- /s/ vs. /z/:
 - Initial: [su] 'sue', [zu] 'zoo'
 - Medial:

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- /s/ vs. /z/:
 - Initial: [su] 'sue', [zu] 'zoo'
 - Medial: [bʌsɪŋ] 'bussing', [bʌzɪŋ] 'buzzing'

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 - Final: [kloʊs] 'close', [kloʊz] 'close'

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Complementary

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When two (or more) phonetically similar sounds never occur in exactly the same environment, but in complementary or mutually-exclusive environments

- p/p^h:

Distribution

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When two (or more) phonetically similar sounds never occur in exactly the same environment, but in complementary or mutually-exclusive environments

- p/p^h:
[spæt] 'spat' [p^hæt] 'pat'
[spul] 'spool' [p^hul] 'pool'
[spik] 'speak' [p^hik] 'peak'

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 - do not occur in minimal pairs

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 - do not occur in minimal pairs
 - are noncontrastive

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- Sounds in complementary distribution
 - are allophones of a single phoneme
 - do not occur in minimal pairs
 - are noncontrastive
 - are predictable (based on environment)

Real-life analogy of complementary distribution

Real-life analogy of complementary distribution



Real-life analogy of complementary distribution

Two people or one person?

Real-life analogy of complementary distribution

Two people or one person?

- Two people or one person?

Real-life analogy of complementary distribution

Two people or one person?

- Two people or one person?
- Do you ever see Superman and Clark Kent in the same environment?

Real-life analogy of complementary distribution

Two people or one person?

- Two people or one person?
- Do you ever see Superman and Clark Kent in the same environment?



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no emergency

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no emergency

Real-life analogy of complementary distribution

We can conclude...

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We can conclude...



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Real-life analogy of complementary distribution

We can conclude...



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- Clark Kent and Superman are different identities of the same person.

Real-life analogy of complementary distribution

The analogy

Real-life analogy of complementary distribution

The analogy

- Clark Kent and Superman are like **allophones**.

Real-life analogy of complementary distribution

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- Clark Kent and Superman are like **allophones**.
- They are **noncontrastive**.

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- Clark Kent and Superman are like **allophones**.
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Real-life analogy of complementary distribution

The analogy

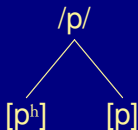
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- Just as **allophones** are different forms of the same **phoneme**, Clark Kent and Superman are different realizations of the same **person**.

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