

Day 4: Phonetics

Ling 200: Introduction to Linguistic Thought

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- Articulation
- Articulatory description
- Diphthongs

Announcements

Announcements

- Quiz 2 (Phonetics) tomorrow

Announcements

- Quiz 2 (Phonetics) tomorrow
- Homework 1 due Monday

Announcements

- Quiz 2 (Phonetics) tomorrow
- Homework 1 due Monday
- IPA flashcards

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar
nasal cavity (nose)	

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar
nasal cavity (nose)	nasal

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar
nasal cavity (nose)	nasal
glottis	

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar
nasal cavity (nose)	nasal
glottis	glottal

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar
nasal cavity (nose)	nasal
glottis	glottal

Definition (Active articulator)

Active articulator —

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar
nasal cavity (nose)	nasal
glottis	glottal

Definition (Active articulator)

Active articulator — Moves during articulation

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar
nasal cavity (nose)	nasal
glottis	glottal

Definition (Active articulator)

Active articulator — Moves during articulation

Definition (Passive articulator)

Passive articulator —

Review

Structures used for articulation

Structure (noun)	Descriptor (adjective)
lips	labial
teeth	dental
alveolar ridge	alveolar
hard palate	palatal
velum (soft palate)	velar
nasal cavity (nose)	nasal
glottis	glottal

Definition (Active articulator)

Active articulator — Moves during articulation

Definition (Passive articulator)

Passive articulator — Remains stationary during articulation

Articulatory Description

Consonants

For consonants, three-part classification system:

Articulatory Description

Consonants

For consonants, three-part classification system:

- voicing

Articulatory Description

Consonants

For consonants, three-part classification system:

- voicing
- place (of articulation)

Articulatory Description

Consonants

For consonants, three-part classification system:

- voicing
- place (of articulation)
- manner (of articulation)

Articulatory Description

Consonants

For consonants, three-part classification system:

- voicing
- place (of articulation)
- manner (of articulation)

Example

voiced labiodental fricative = [ɸ]

Articulatory Description

Consonants

For consonants, three-part classification system:

- voicing
- place (of articulation)
- manner (of articulation)

Example

voiced labiodental fricative = [v]

Articulatory Description

Voicing

Articulatory Description

Voicing

Definition (Voicing)

What's going on at the larynx—vocal folds vibrating or not

Articulatory Description

Voicing

Definition (Voicing)

What's going on at the larynx—vocal folds vibrating or not

- Vocal folds spread

Articulatory Description

Voicing

Definition (Voicing)

What's going on at the larynx—vocal folds vibrating or not

- Vocal folds spread = not vibrating

Articulatory Description

Voicing

Definition (Voicing)

What's going on at the larynx—vocal folds vibrating or not

- Vocal folds spread = not vibrating = voiceless

Articulatory Description

Voicing

Definition (Voicing)

What's going on at the larynx—vocal folds vibrating or not

- Vocal folds spread = not vibrating = voiceless
- Vocal folds together

Articulatory Description

Voicing

Definition (Voicing)

What's going on at the larynx—vocal folds vibrating or not

- Vocal folds spread = not vibrating = voiceless
- Vocal folds together = vibrating

Articulatory Description

Voicing

Definition (Voicing)

What's going on at the larynx—vocal folds vibrating or not

- Vocal folds spread = not vibrating = voiceless
- Vocal folds together = vibrating = voiced

Articulatory Description

Voicing

Voicing pairs

Articulatory Description

Voicing

Voicing pairs

Voiceless

Voiced

Articulatory Description

Voicing

Voicing pairs

Voiceless	Voiced
[p] <u>pat</u>	[b] <u>bat</u>

Articulatory Description

Voicing

Voicing pairs

Voiceless

Voiced

[p] pat

[b] bat

[t] tie

[d] die

Articulatory Description

Voicing

Voicing pairs

Voiceless

Voiced

[p] pat

[b] bat

[t] tie

[d] die

[k] kill

[g] gill

Articulatory Description

Voicing

Voicing pairs

Voiceless	Voiced
-----------	--------

[p] pat

[b] bat

[t] tie

[d] die

[k] kill

[g] gill

[f] fat

[v] vat

Articulatory Description

Voicing

Voicing pairs

Voiceless	Voiced
-----------	--------

[p] pat

[b] bat

[t] tie

[d] die

[k] kill

[g] gill

[f] fat

[v] vat

[s] sip

[z] zip

Articulatory Description

Voicing

Voicing pairs

Voiceless	Voiced
-----------	--------

[p] pat

[b] bat

[t] tie

[d] die

[k] kill

[g] gill

[f] fat

[v] vat

[s] sip

[z] zip

[θ] thigh

[ð] thy

Articulatory Description

Voicing

Voicing pairs

Voiceless	Voiced
[p] <u>pat</u>	[b] <u>bat</u>
[t] <u>tie</u>	[d] <u>die</u>
[k] <u>kill</u>	[g] <u>gill</u>
[f] <u>fat</u>	[v] <u>vat</u>
[s] <u>sip</u>	[z] <u>zip</u>
[θ] <u>thigh</u>	[ð] <u>thy</u>
[ʃ] <u>dilution</u>	[ʒ] <u>delusion</u>

Articulatory Description

Voicing

Voicing pairs

Voiceless	Voiced
[p] <u>pat</u>	[b] <u>bat</u>
[t] <u>tie</u>	[d] <u>die</u>
[k] <u>kill</u>	[g] <u>gill</u>
[f] <u>fat</u>	[v] <u>vat</u>
[s] <u>sip</u>	[z] <u>zip</u>
[θ] <u>thigh</u>	[ð] <u>thy</u>
[ʃ] <u>dilution</u>	[ʒ] <u>delusion</u>
[tʃ] <u>etch</u>	[dʒ] <u>edge</u>

Articulatory Description

Place

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips

Articulatory Description

Place

Definition (*Place of articulation*)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]

Articulatory Description

Place

Definition (*Place of articulation*)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental

Articulatory Description

Place

Definition (*Place of articulation*)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal — blade of tongue at or near hard palate

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal — blade of tongue at or near hard palate
 - [ʃ], [ʒ], [tʃ], [dʒ], [j]

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal — blade of tongue at or near hard palate
 - [ʃ], [ʒ], [tʃ], [dʒ], [j]
- Velar

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal — blade of tongue at or near hard palate
 - [j], [ç], [tʃ], [dʒ], [j]
- Velar — back of tongue at or near soft palate

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal — blade of tongue at or near hard palate
 - [ʃ], [ʒ], [tʃ], [dʒ], [j]
- Velar — back of tongue at or near soft palate
 - [k], [g], [ŋ]

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal — blade of tongue at or near hard palate
 - [ʃ], [ʒ], [tʃ], [dʒ], [j]
- Velar — back of tongue at or near soft palate
 - [k], [g], [ŋ]
- Glottal

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal — blade of tongue at or near hard palate
 - [ʃ], [ʒ], [tʃ], [dʒ], [j]
- Velar — back of tongue at or near soft palate
 - [k], [g], [ŋ]
- Glottal — vocal fold approximation

Articulatory Description

Place

Definition (Place of articulation)

Where in the vocal tract constriction is made

- Bilabial — both lips
 - [b], [p], [m], [w], [w̥]
- Labiodental — lower lip and upper teeth
 - [f], [v]
- Interdental — tip of tongue between the teeth
 - [θ], [ð]
- Alveolar — tip or blade of tongue on near alveolar ridge
 - [t], [d], [n], [l], [ɹ], [s], [z]
- (Alveo-)Palatal — blade of tongue at or near hard palate
 - [ʃ], [ʒ], [tʃ], [dʒ], [j]
- Velar — back of tongue at or near soft palate
 - [k], [g], [ŋ]
- Glottal — vocal fold approximation

Articulatory Description

Manner

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal — full obstruction in the oral cavity, velum lowered

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal — full obstruction in the oral cavity, velum lowered
 - [m], [n], [ŋ]

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal — full obstruction in the oral cavity, velum lowered
 - [m], [n], [ŋ]
- Liquid

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal — full obstruction in the oral cavity, velum lowered
 - [m], [n], [ŋ]
- Liquid — partial obstruction, but no turbulence

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal — full obstruction in the oral cavity, velum lowered
 - [m], [n], [ŋ]
- Liquid — partial obstruction, but no turbulence
 - [l] (lateral), [ɹ] (retroflex)

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal — full obstruction in the oral cavity, velum lowered
 - [m], [n], [ŋ]
- Liquid — partial obstruction, but no turbulence
 - [l] (lateral), [ɹ] (retroflex)
- Glide

Articulatory Description

Manner

Definition (*Manner of articulation*)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal — full obstruction in the oral cavity, velum lowered
 - [m], [n], [ŋ]
- Liquid — partial obstruction, but no turbulence
 - [l] (lateral), [ɹ] (retroflex)
- Glide — some constriction

Articulatory Description

Manner

Definition (Manner of articulation)

How the air is being modified as it moves through the vocal tract

- Stops — full obstruction in the oral cavity
 - [p], [b], [t], [d], [k], [g], [ʔ]
- Fricatives — partial obstruction, with turbulence
 - [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ]
- Affricates — stop followed by fricative
 - [tʃ], [dʒ]
- Nasal — full obstruction in the oral cavity, velum lowered
 - [m], [n], [ŋ]
- Liquid — partial obstruction, but no turbulence
 - [l] (lateral), [ɹ] (retroflex)
- Glide — some constriction
 - [w], [j]

Phonetic Alphabets

Why use a phonetic alphabet

Why?

Phonetic Alphabets

Why use a phonetic alphabet

Why?

- Some languages have no writing system

Phonetic Alphabets

Why use a phonetic alphabet

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- Some languages have no writing system
- There's no one-to-one correspondence between letters and sounds:

Phonetic Alphabets

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dad, father, about, many

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 - Same sound, different letters:

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 - Letters without sound:

Phonetic Alphabets

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 - Same sound, different letters:
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 - Single sound, multiple letters:
shoot, nation, chord, chip
 - Multiple sounds, single letter:
box, use
 - Letters without sound:
gnaw, sword, debt, damn, bomb

Phonetic Alphabets

IPA

The IPA

Phonetic Alphabets

IPA

The IPA

Definition (IPA)

The International Phonetic Alphabet

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Vowels

Articulation

Articulatory description

Diphthongs

Vowels

Articulation

Vowels

Articulation

- Four chambers in mouth

Vowels

Articulation

- Four chambers in mouth
 - Oral cavity

Vowels

Articulation

- Four chambers in mouth
 - Oral cavity
 - Pharynx

Vowels

Articulation

- Four chambers in mouth
 - Oral cavity
 - Pharynx
 - Area between lips

Vowels

Articulation

- Four chambers in mouth
 - Oral cavity
 - Pharynx
 - Area between lips
 - (Nasal cavity)

Vowels

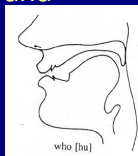
Articulation

- Four chambers in mouth
 - Oral cavity
 - Pharynx
 - Area between lips
 - (Nasal cavity)
- Length and shape of each chamber affects the ‘resonance’ of vowel sound

Vowels

Articulation

- Four chambers in mouth
 - Oral cavity
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 - (Nasal cavity)
- Length and shape of each chamber affects the ‘resonance’ of vowel sound



- http://www.exploratorium.edu/exhibits/vocal_vowels/vocal_vowels.html

Vowels

Articulatory description

4-part classification system for vowels:

Vowels

Articulatory description

4-part classification system for vowels:

- Tongue height

Vowels

Articulatory description

4-part classification system for vowels:

- Tongue height
- Frontness vs. backness of tongue

Vowels

Articulatory description

4-part classification system for vowels:

- Tongue height
- Frontness vs. backness of tongue
- Tenseness

Vowels

Articulatory description

4-part classification system for vowels:

- Tongue height
- Frontness vs. backness of tongue
- Tenseness
- Lip rounding

Vowels

Articulatory description

4-part classification system for vowels:

- Tongue height
- Frontness vs. backness of tongue
- Tenseness
- Lip rounding
- (Nasality)

Vowels

Height

Vowel Height

Vowels

Height

Vowel Height

- High vowels

Vowels

Height

Vowel Height

- High vowels — tongue body is raised

Vowels

Height

Vowel Height

- High vowels — tongue body is raised
 - [i], [ɪ], [u], [ʊ]

Vowels

Height

Vowel Height

- High vowels — tongue body is raised
 - [i], [ɪ], [u], [ʊ]
- Mid vowels

Vowels

Height

Vowel Height

- High vowels — tongue body is raised
 - [i], [ɪ], [u], [ʊ]
- Mid vowels — tongue body is intermediate

Vowels

Height

Vowel Height

- High vowels — tongue body is raised
 - [i], [ɪ], [u], [ʊ]
- Mid vowels — tongue body is intermediate
 - [e], [ɛ], [o], [ɔ], [ə], [ʌ]

Vowels

Height

Vowel Height

- High vowels — tongue body is raised
 - [i], [ɪ], [u], [ʊ]
- Mid vowels — tongue body is intermediate
 - [e], [ɛ], [o], [ɔ], [ə], [ʌ]
- Low vowels

Vowels

Height

Vowel Height

- High vowels — tongue body is raised
 - [i], [ɪ], [u], [ʊ]
- Mid vowels — tongue body is intermediate
 - [e], [ɛ], [o], [ɔ], [ə], [ʌ]
- Low vowels — tongue body is lowered

Vowels

Height

Vowel Height

- High vowels — tongue body is raised
 - [i], [ɪ], [u], [ʊ]
- Mid vowels — tongue body is intermediate
 - [e], [ɛ], [o], [ɔ], [ə], [ʌ]
- Low vowels — tongue body is lowered
 - [æ], [a]

Vowels

Frontness/Backness

Vowel Frontness/Backness

Vowels

Frontness/Backness

Vowel Frontness/Backness

- Front vowels

Vowels

Frontness/Backness

Vowel Frontness/Backness

- Front vowels — tongue body is pushed forward

Vowels

Frontness/Backness

Vowel Frontness/Backness

- Front vowels — tongue body is pushed forward
 - [i], [ɪ], [e], [ɛ], [æ]

Vowels

Frontness/Backness

Vowel Frontness/Backness

- Front vowels — tongue body is pushed forward
 - [i], [ɪ], [e], [ɛ], [æ]
- Central vowels

Vowels

Frontness/Backness

Vowel Frontness/Backness

- Front vowels — tongue body is pushed forward
 - [i], [ɪ], [e], [ɛ], [æ]
- Central vowels — tongue body is neutral

Vowels

Frontness/Backness

Vowel Frontness/Backness

- Front vowels — tongue body is pushed forward
 - [i], [ɪ], [e], [ɛ], [æ]
- Central vowels — tongue body is neutral
 - [ə], [ʌ]

Vowels

Frontness/Backness

Vowel Frontness/Backness

- Front vowels — tongue body is pushed forward
 - [i], [ɪ], [e], [ɛ], [æ]
- Central vowels — tongue body is neutral
 - [ə], [ʌ]
- Back vowels

Vowels

Frontness/Backness

Vowel Frontness/Backness

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Vowels

Frontness/Backness

Vowel Frontness/Backness

- Front vowels — tongue body is pushed forward
 - [i], [ɪ], [e], [ɛ], [æ]
- Central vowels — tongue body is neutral
 - [ə], [ʌ]
- Back vowels — tongue body is pulled back
 - [u], [ʊ], [o], [ɔ], [ɑ]

Vowels

Tenseness

Vowel Tenseness

Vowels

Tenseness

Vowel Tenseness

- Tense vowels

Vowels

Tenseness

Vowel Tenseness

- Tense vowels — more extreme / peripheral tongue position, slightly longer (English)

Vowels

Tenseness

Vowel Tenseness

- Tense vowels — more extreme / peripheral tongue position, slightly longer (English)
 - [i], [e], [u], [o]

Vowels

Tenseness

Vowel Tenseness

- Tense vowels — more extreme / peripheral tongue position, slightly longer (English)
 - [i], [e], [u], [o]
- Lax vowels

Vowels

Tenseness

Vowel Tenseness

- Tense vowels — more extreme / peripheral tongue position, slightly longer (English)
 - [i], [e], [u], [o]
- Lax vowels — more neutral / less peripheral tongue position

Vowels

Tenseness

Vowel Tenseness

- Tense vowels — more extreme / peripheral tongue position, slightly longer (English)
 - [i], [e], [u], [o]
- Lax vowels — more neutral / less peripheral tongue position
 - [ɪ], [ɛ], [ʊ], [ɔ], [æ], [a], [ʌ], [ə]

Vowels

Roundness

Vowel Roundness

Vowels

Roundness

Vowel Roundness

- Rounded

Vowels

Roundness

Vowel Roundness

- Rounded — produced with rounded lips

Vowels

Roundness

Vowel Roundness

- Rounded — produced with rounded lips
 - [u], [o], [ʊ], [ɔ]

Vowels

Roundness

Vowel Roundness

- Rounded — produced with rounded lips
 - [u], [o], [ʊ], [ɔ]
- Unrounded

Vowels

Roundness

Vowel Roundness

- Rounded — produced with rounded lips
 - [u], [o], [ʊ], [ɔ]
- Unrounded — produced with unrounded lips

Vowels

Roundness

Vowel Roundness

- Rounded — produced with rounded lips
 - [u], [o], [ʊ], [ɔ]
- Unrounded — produced with unrounded lips
 - [i], [ɪ], [e], [ɛ], [æ], [ʌ], [ə]

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Diphthongs

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Definition (Diphthong)

A two-part vowel sound consisting of transition from one vowel to another in same syllable

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Diphthongs of English

- [aɪ]

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- [aɪ] = [ai] = [aj]

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- [aɪ] = [ai] = [aj]
- [oɪ]

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- [aɪ] = [ai] = [aj]
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- [e]

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- [ɔ]

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- [aʊ] = [au] = [aw]
- [eɪ] = [ei] = [eɪ] = [ej]
- [oʊ] = [ou] = [oʊ] = [ow]