

LING 450/550

17 English Vowels

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# English Vowels

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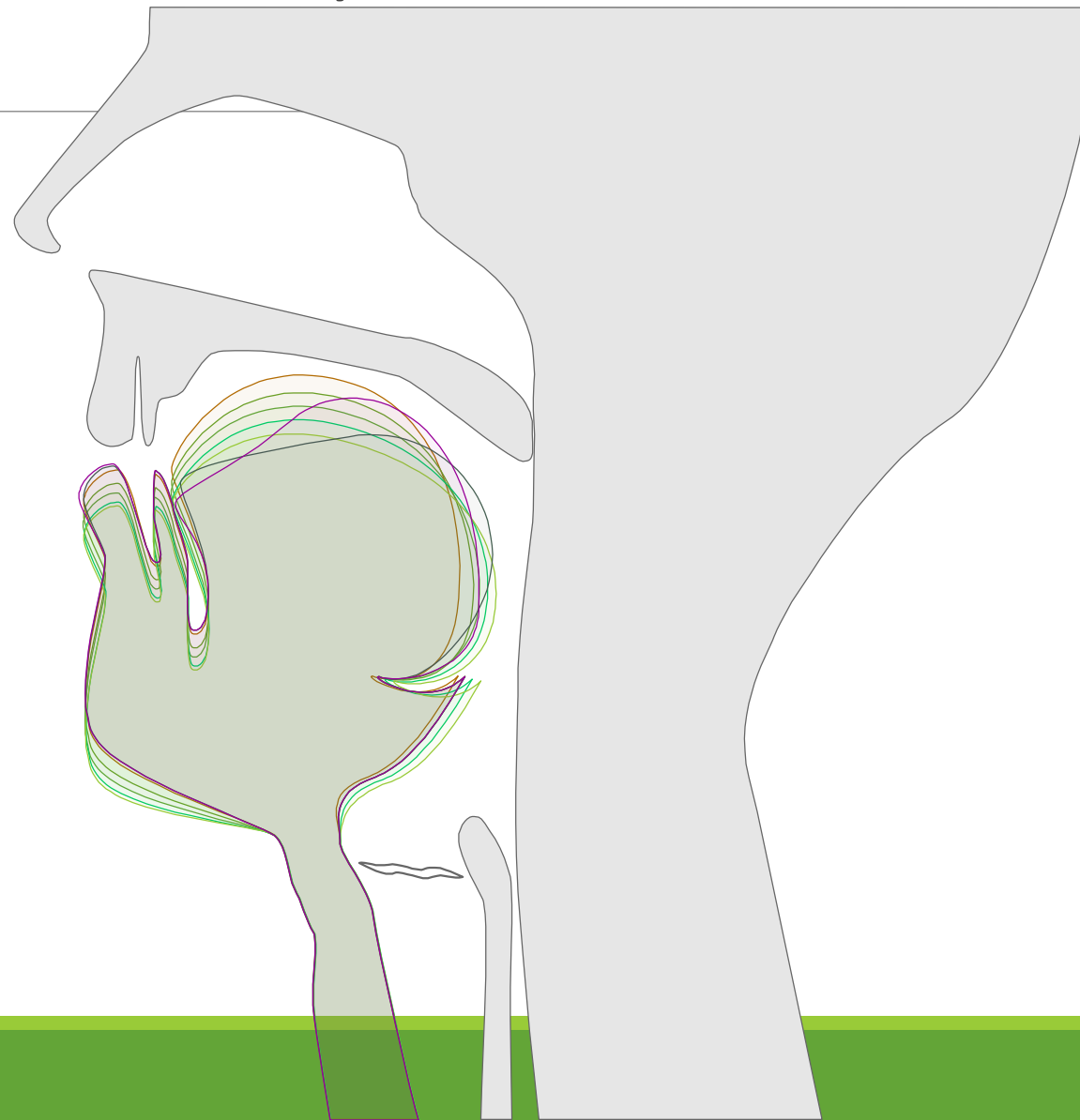
FEATURES AND ALTERNATIONS

READ LADEFOGED & JOHNSON, CHAPTER 4

adapted from slides by Liz McCullough, Richard Wright, Dan McCloy, and Valerie Freeman

# Vowel Articulations Overlay

i  
I  
ε  
æ  
a  
ʊ  
u



# Vowel Quality and Feature Classification

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*Vowel quality* is a cover term for the auditory basis on which we distinguish one vowel from another.

- Recall that we distinguish consonants based on *articulatory* features like *voicing*, *place*, and *manner* of articulation. Similarly, we distinguish vowels based on a combination of features, but vowels are commonly classified based on *auditory features* (characteristics of how the vowel sounds), not articulatory ones.
- The primary classification of vowels occurs along two dimensions described by two pairs of features: front–back and high–low.
  - A secondary (articulatory) feature that can be added to a vowel at any height or backness is lip rounding: rounded–unrounded.
- An additional auditory feature is needed to fully distinguish some pairs of vowels: tense–lax.

# Monophthongs, Diphthongs, and Triphthongs

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Vowels which have a single quality are called *monophthongs*. Vowels which move between two or three qualities within one syllable are called *diphthongs* or *triphthongs*.

Diphthongs are comprised of a *nucleus* and a *glide*. *On-glides* come before the nucleus; *off-glides* come after. Triphthongs have two glides (two on-glides, two off-glides, or one of each).

- Diphthong end points are often different from the monophthong qualities in the system.
- Off-glides often fall short of their phonemic targets.
- In English diphthongs, the starting quality is tense and the ending quality is lax.
  - “pie” /paɪ/, “cow” /kaʊ/, “toy” /tɔɪ/, “pay” /peɪ/, “toe” /toʊ/

# Transcribing Diphthongs

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Monophthongs are written with a single IPA symbol. Diphthongs are written with two, and triphthongs with three.

- Glides are transcribed with normal vowel symbols: [aʊ], optionally with the “non-syllabic” diacritic: [aʊ̯], or sometimes as a raised vowel: [a<sup>ʊ</sup>].

Some linguists consider “cute” to contain a diphthong, usually transcribed as /kjut/.

- Strictly speaking, this is incorrect, because using a /j/ implies that the sound is behaving phonologically like a *consonant*, and only *vowels* can form diphthongs.
- The “on-glide” /j/ sound is more accurately transcribed as a true diphthong (/kiut/), or as palatalization of the preceding consonant ([k<sup>h</sup>iut]).

# Rhotic and Rhotacized Vowels

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A *rhotic* or *rhotacized vowel* is a vowel produced with an “r-like” quality.

- Rhotic vowels inherently have this quality. Rhotacized vowels are caused by overlap between a normal vowel and a following /ɹ/-like sound.

These vowels are usually transcribed by a small “wing” attached to the vowel symbol: “purr” [p<sup>h</sup>ɹ̥], “heard” [hɹ̥d], “murder” [ˈmɹ̥ɹ̥]. Another possible analysis is to consider them syllabic consonants: “murder” [ˈmɹ̥ɹ̥ɹ̥].

- Some linguists consider vowels followed by /ɹ/ to be diphthongs or triphthongs rather than rhotacized vowels.
  - “are” /ɑɹ/, “err” /ɛɹ/, “or” /ɔɹ/, “ear” /iɹ/, “ire” /aɪɹ/

# Tense vs. Lax

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- In describing American English, the tense-lax distinction is only needed to separate pairs of non-low vowels.

Tenseness is primarily a way to group vowels based on their behavior in different phonological environments.

- Lax vowels generally occur in *closed syllables* (those with codas), while tense vowels can also occur in *open syllables* (those without codas). /a/ patterns with tense vowels, and /æ/ with lax.
  - <http://corpus.linguistics.berkeley.edu/acip/course/chapter4/example43.html>
- Lax vowels are more central and shorter than tense counterparts.



# Some Common Vowel Alternations

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*Vowel shortening:* In English, vowels occurring before voiceless *obstruents* (stops, fricatives, affricates) are measurably shorter than before voiced obstruents.

- Example: “cab” [kæb] vs. “cap” [kæp]
- Vowels are longer in open syllables, stressed syllables, and monosyllabic (one-syllable) words.

*Vowel devoicing:* Unstressed vowels that occur after voiceless consonants are often devoiced.

- Example: “potato” [pə'theɪrəʊ]

# Some Common Vowel Alternations

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*Vowel nasalization*: Vowels that occur before nasal consonants are often nasalized.

- Example: “can” [kæ̃n]





























































*Canadian raising*: A characteristic of some dialects of North American English in which the nucleus of diphthongs that occur before voiceless consonants are raised.

- Example: “fight” [fʰaɪ̯t] (raised) vs. “fire” [fʰaɪ̯r] (non-raised)

<http://corpus.linguistics.berkeley.edu/acip/course/chapter4/hw/exercise4H.html>

# The Vowels of English

chart based on Ladefoged *Vowels and Consonants* (2001), p. 28

General American	Received Pronunciation (British)	b__d/t	k__d/t	h__d	h__t	h__	__r
 i 		bead	keyed	heed	heat	he	 beer 
 ɪ 		bid	kid	hid	hit		
 eɪ 		bayed	Cade	hayed	hate	hay	
 ɛ 		bed		head			 bare 
 æ 		bad	cad	had	hat		
 ɑɪ 	ɑ 	bard	card	hard	heart		 bar 
 ɑ 	ɒ 	body	cod	hod	hot		
 ɔ 		bawd	cawed	hawed		haw	 bore 
 ʊ 		Buddhist	could	hood			
 ɒʊ 	əʊ 	bode	code	hoed		hoe	 (boar) 
 u 		booed	cooed	who'd	hoot	who	 tour, poor 
 ʌ 		bud	cud	Hudd	hut		
 ɜ 	ɜ 	bird	curd	herd	hurt	her	 burr, purr 
 aɪ 		bide	kite	hide	height	high	 fire 
 aʊ 		bowed	cowed	how'd		how	 hour 
 ɔɪ 		Boyd			Hoyt	(a)hoy	 (coir) 
 iu/ju 		butte	cute	hued		hue	 pure 

# Variation in English Pronunciation

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[http://accent.gmu.edu/browse\\_language.php?function=find&language=english](http://accent.gmu.edu/browse_language.php?function=find&language=english)

# Exploration:

## Variation in English Pronunciation

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1. Select at least 4 Regional US dialects to compare. Listen to the audio and pay attention to the transcriptions
2. Focus on vowels, but also consider consonants. Compare pronunciations across regions. What differences/similarities do you find? Note, variation can depend on sound environment. Be sure to refer to audio and not just rely on the transcriptions.
3. Explore the database further-look at other dialects of English outside of the U.S. Consider why the specific passage was chosen. . What are some pros and cons of a database like this one?
4. The database also has L2 speakers of English. Choose a few languages to look at. Before listening to the audio, look at the phonetic inventory of the languages and predict what pronunciation differences might be present . Then test your predictions.

# Lexical Sets

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In some traditions, especially when dialect variation is of interest, English vowels may be referred to using lexical sets rather than IPA symbols.

A lexical set consists of a class of words with a common stressed vowel, and is represented by a conventionalized key word.

- Examples: KIT (AmE /ɪ/), DRESS (AmE /ɛ/), TRAP (AmE /æ/)

The key words are meant to be identifiable even with variation in vowel pronunciation.

- Thus, they are not, e.g., HID, HEAD, HAD.

# Review Requests

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What questions or concepts would you like to review?

To increase the effectiveness of our review, please be as specific as possible.

- If you say “vowels,” that doesn’t give me much to go on, and it’s less likely that we’ll be able to resolve your confusion.
- If you say “how formants relate to our perceptions of vowels,” that’s something specific that we can review in detail.

# Review Preparation

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The final exam will resemble homework assignments and quizzes more than transcription assignments, labs, or the mystery language project.

Think about topics that you might want to cover in our review class next week.

- I'll ask for your requests

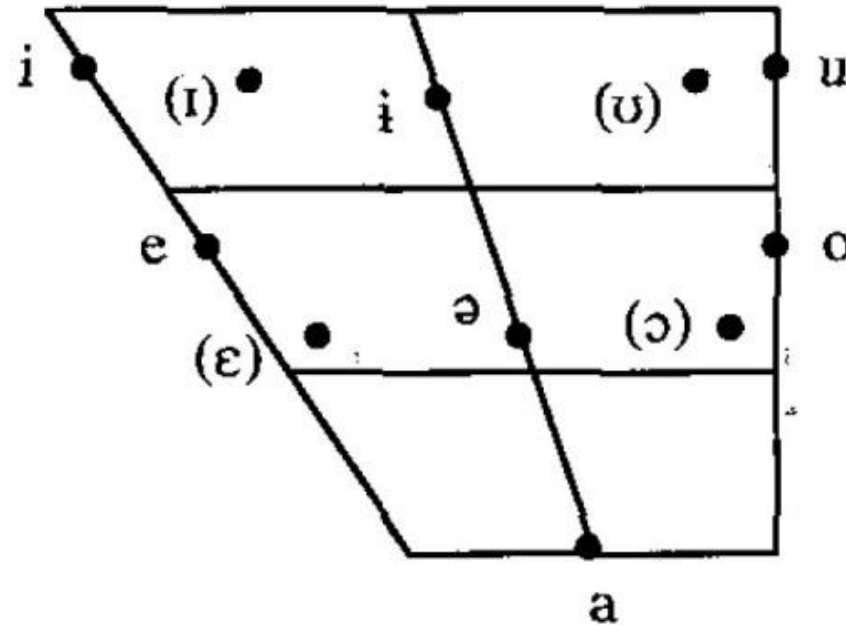


# Amharic

EJECTIVES AND LABIALIZED CONSONANTS

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# Amharic vowels



“Following post-alveolar and palatal consonants, (which, from a phonological point of view, form a 'palatal' series), /ɨ/ and /ɘ/ are often fronted to [ɪ] and [ɛ]. Following labialized consonants and /w/, /ɨ/ and /ɘ/ typically have retracted and rounded pronunciations ([ʊ] and [ɔ]).”

Hayward, Katrina, and Richard J. Hayward. 1999. Amharic. In International Phonetic Association (eds.), *Handbook of the International Phonetic Association*, 45-50. Cambridge: Cambridge University Press.

# Amharic consonants


	labial	labial-ized	alveolar	labial-ized	post-alveolar	palatal	velar	labial-ized	glottal	labial-ized
stop	(p) b (p')	b <sup>w</sup> (p <sup>w</sup> )	t t' d	t <sup>w</sup>			k k' g	k <sup>w</sup> g <sup>w</sup> k <sup>w</sup>	ʔ	ʔ <sup>w</sup>
affricate					tʃ dʒ tʃ'					
fricative	f	f <sup>w</sup>	s s' z		ʃ ʒ				h	h <sup>w</sup>
nasal	m	m <sup>w</sup>	n			ɲ				
trill			r							
approxi- mant	w					j				
lateral approx.			l							

“Because of its affinity with the labialized consonants, we have placed [w] in the 'labial' column.” (Hayward and Hayward 1999:46)

# Amharic listening practice

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 [bəkk'ələ] 'it sprouted'

 [g<sup>w</sup>agg<sup>w</sup>a] 'he became full of suspense'





















 [b<sup>w</sup>amb<sup>w</sup>a] 'pipe (conduit)'

 [tʃ'ər:əsə] 'he finished'

 [t'ər:əgə] 'he swept'

 [k'əd:ədə] 'he tore something'

# Amharic transcription

- |   |  |
|---|--|
| 1.  '13 <sup>th</sup> month' [p <sup>w</sup> 'ag <sup>w</sup> əme] | 11.  'he who says' [jəm:il]             |
| 2.  'after' [h <sup>w</sup> ala]                                   | 12.  'he wrote' [s'afə]                 |
| 3.  'ball' [k <sup>w</sup> as]                                     | 13.  'husband' [bal]                    |
| 4.  'breast' [t'ut]  | 14.  'lock' [k <sup>w</sup> 'əlf]       |
| 5.  'cattle' [kəbt]  | 15.  'pocket' [kis]                     |
| 6.  'church patriarch' [p'app'as]                                  | 16.  'post, mail' [posta]               |
| 7.  'doctor' [hakim]   | 17.  'priest' [k'es]                    |
| 8.  'fast' (n.) [s'om]  | 18.  'this' [jɪh]                      |
| 9.  'flood' [g <sup>w</sup> ərf]                                 | 19.  'wax taper' [t <sup>w</sup> 'af] |
| 10.  'he swallowed sth' [wat'ə]                                  | 20.  'what?' [mɪn]                    |

# Reminders

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For Monday read Hayes Ch 2

For Monday: HW 13