Unit 6

The contrastive phonology of the syllable nucleus

Why English vowels and diphthongs may seem difficult

Print version of the
Practical English Phonetics /
Phonetics with Listening Practice (British & General)
presentation given on
17 November 2026

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6.1

Dedication

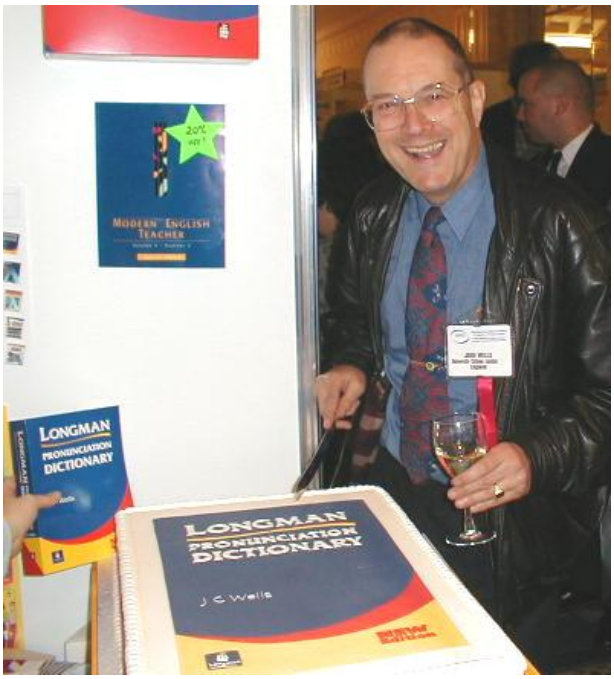


Image source: unknown

probably copyright J.C. Wells or Pearson Education Ltd

John Christopher Wells (born 11.03.1939)

6.2

1 Transatlantic relations

The daily horror the British are forced to face in the U.S.

- `https://www.youtube.com/shorts/o2Q4_3-AAVU`
- If this link is not working …
- … just search the Internet for "Maggie Smith tea" and you will find dozens of others.

6.3

2 IPA practice

George Orwell's rules for making 'A Nice Cup of Tea'

- Choose one of the following transcriptions, depending on your preferred dialect of English, and read it aloud:
- BrE: ˈfɜːst əv ˈɔːl wʌn ʃʊd ˈjuːz ˈɪnd i ən ɔː ˌsɪl ə ˈniːz ˌtiː
- AmE: ˈfɜɹst əv ˈɔːl wʌn ʃʊd ˈjuːz ˈɪnd i ən ɔɹ ˌseɪl ə ˈniːz ˌtiː

6.4

3 Goals

The goals of today's session are:

1. To give an overview of the systems of monophthong and diphthong vowel phonemes that occur in English syllables
2. To prepare the ground for systematic comparisons with the systems of monophthongs and diphthongs in other languages
3. To begin examining the typical phonetic realizations (phones, allophones) of the monophthong and diphthong vowel phonemes of English in (among others)
   (a) the Received Pronunciation of British English (BrE: RP)
   (b) General American English (AmE: GA)
   (c) the "broad" accent of Australian English (AuE: broad)
4. To begin practising (AmE: practicing) some of the English monophthong and diphthong vowel phonemes that can be problematic for speakers of other languages

6.5

4 Important issues

Important issues

- Vowel quadrilateral or vowel triangle? (see next issue …)
- Vowel distinctions:
  - 5-vowel system or 6-vowel system?
  - Tense vs lax vowels
  - Long vs short vowels
  - (see Middle English table below)
- 'Subsystems' of the vowel system, e.g.:
  - … just front vowels
  - … closing (not 'rising'!) vs centering diphthongs
  - … optional vs 'historical' diphthongs
- Phonemic SPLITS and MERGERS: how the system is evolving, e.g.:
  - LOT–CLOTH split in slightly older RP BrE
    * "getting AWF the bus" (Listening Exercise 1)
    * "reng AWF" ('rang off') (Listening Exercise 2)
  - Mary–marry–merry merger in modern GA AmE
  - PALM–LOT–CLOTH–THOUGHT merger in modern GA AmE

6.6

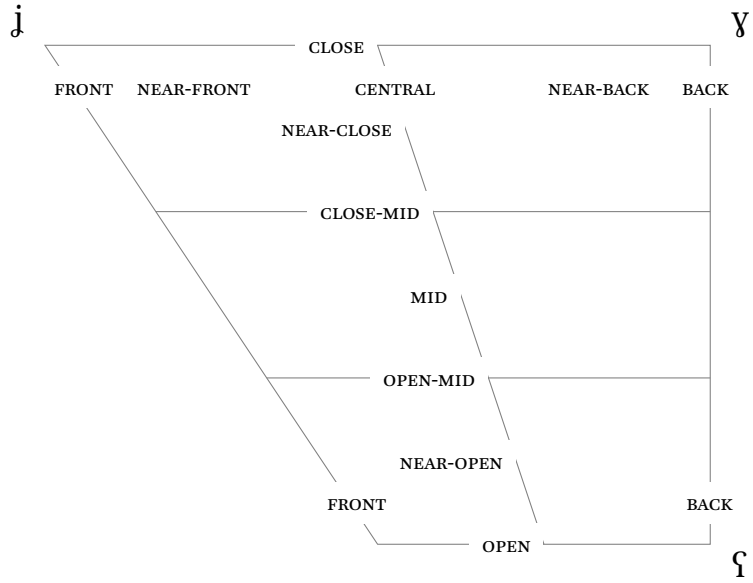
Middle English monophthongs (simplified)

front		central		back		
long	short			short	long	
tense	lax			lax	tense	
iː	i			u	uː	close
eː	e			o	oː	close-mid
ɛː					ɔː	open-mid
		a	aː			open
		lax	tense			
		short	long			
unrounded		unrounded		rounded		

6.7

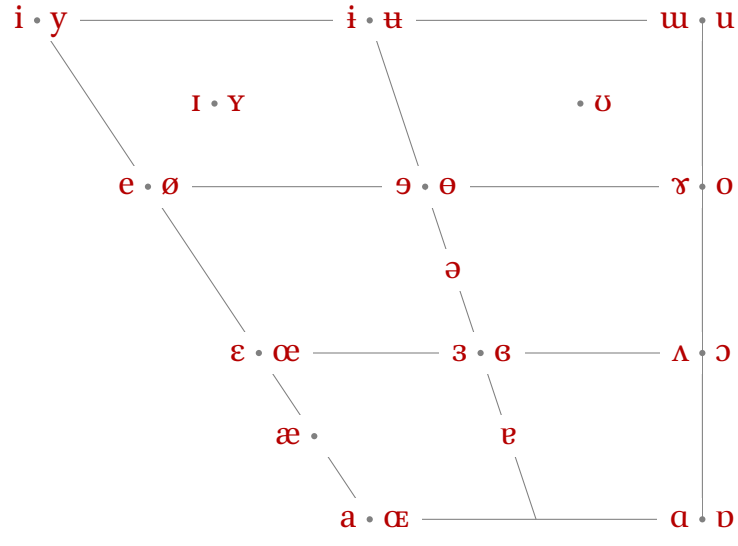
5 The vowel quadrilateral and the IPA cardinal vowels

Vowel Quadrilateral



6.8

Cardinal Vowels



(Fr.:) «les (‘voyelles’) cardinales»

... dressed in red :-) ...
... they have numbers:
`https://en.wikipedia.org/wiki/Cardinal_vowels` 6.9

Skip this

יִגְוַע (Genesis 6:17)
‘soll untergehen’ [Lutherbibel 1545]
‘will die’ [Authorised (King James) Version 1611]
yiḡ·wā ‘
[jiɣˈwɑʕ]
[j] (palatal approximant)
⇓
[ʝ] (palatal fricative)
[ʝiɣˈwɑʕ] (e.g. articulated in anger)
This sequence of sounds fully maps out the anatomical vowel space ...

[	i	u	ɑ	]
[	ʝ	ɣ	ʕ	]

... within the boundaries defined by turbulent airflow
Root:
גוע ‘expire, perish, die’ (Strong’s Concordance Number 1478); cf Arabic
جاع ‘be empty, hungry’ 6.10

6 English short monophthongs

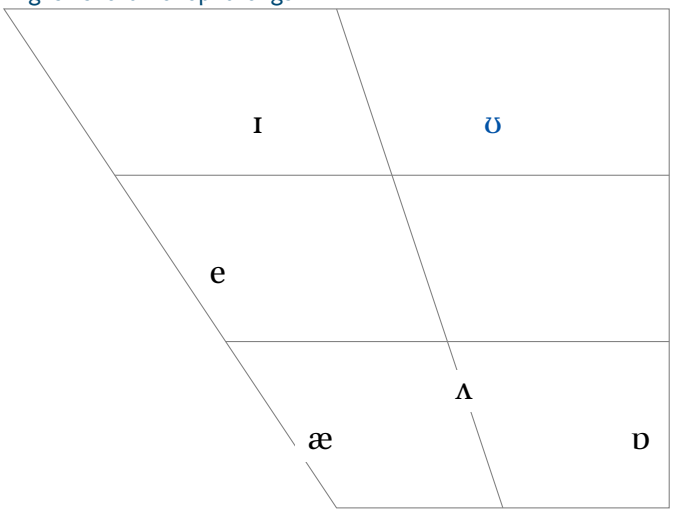
English short monophthongs: lexical sets



Why the gap at the back?
Hint:
⟨put⟩ ⟨cut⟩ ⟨come⟩ ⟨long⟩
/pʊt/ /kʌt/ /kʌm/ /lɒŋ/

6.11

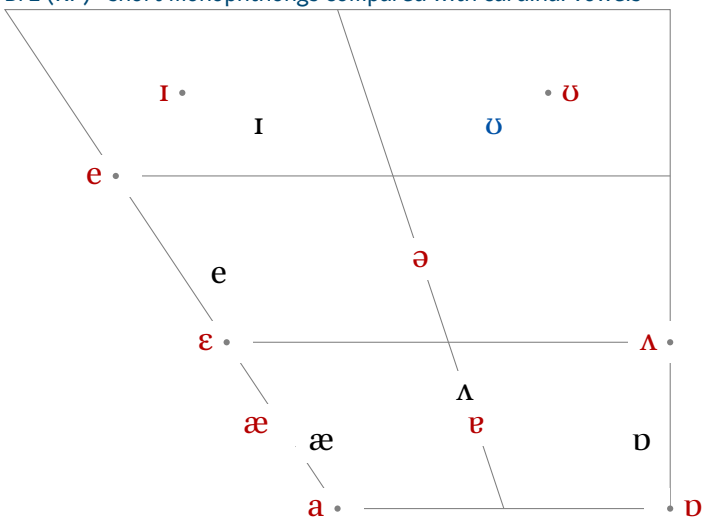
English short monophthongs



Front vowels /æ e ɪ/: AusE, older RP [ɛ e i]; newest RP [a ɛ ɪ] (straight line); NZE, white SAfE [ɛ ɪ ə] (telephone dial)
Back open vowel: AmE unrounded /ɑ /, not rounded /ɒ/.

6.12

BrE (RP)* short monophthongs compared with cardinal vowels



*more Charles and Camilla than William and Kate

6.13

English short vowels: examples

pit	pet	pat	pot	putt	put
/pɪt/	/pet/	/pæt/	/pɒt/ (/pɑt/)	/pʌt/	/pʊt/
[pʰɪt]	[pʰɛ̟t]	[pʰæt]	[pʰɒt] ([pʰɑt])	[pʰɐt]	[pʰʊt]

bit	bid	wick	wig	nip	nib	hiss	his
[bɪt]	[bɪˑd]	[wɪk]	[wɪˑg]	[nɪp]	[nɪˑb]	[hɪs]	[hɪˑz]

set	said	debt	dead	etch	edge	cess	says
[sɛ̟t]	[sɛ̟ˑd]	[dɛ̟t]	[dɛ̟ˑd]	[ɛ̟ʧ]	[ɛ̟ˑd͡ʒ]	[sɛ̟s]	[sɛ̟ˑz]

fat	fad	back	bag	batch	badge	slap	slab
[fæt]	[fæˑd]	[bæk]	[bæˑg]	[bæʧ]	[bæˑd͡ʒ]	[slæp]	[slæˑb]

cop	cob	knot	nod	lock	log	hops	Hobbes
[kʰɒp]	[kʰɒˑb]	[nɒt]	[nɒˑd]	[lɒk]	[lɒˑg]	[hɒps]	[hɒˑbz]

cup	cub	duck	dug	fuss	fuzz	once	ones
[kʰɐp]	[kʰɐˑb]	[dɐk]	[dɐˑg]	[fɐs]	[fɐˑz]	[wɐns]	[wɐˑnz]

put	bush	soot	foot	wool	stood	hood	good
[pʰʊt]	[bʊʃ]	[sʊt]	[fʊt]	[wʊˑl]	[stʊˑd]	[hʊˑd]	[gʊˑd]

6.14

Vowel ‘clipping’

- English vowels are about one-sixth shorter before a ‘fortis’ final consonant, like /p/, than before a ‘lenis’ final consonant, like /b/. Two examples from a Luxembourgish English learner:
  search sounded like *surge*, and (‘rock band’) *merch* sounded like *merge*, because the vowels before fortis /tʃ/ should be a little shorter than the vowels before lenis /dʒ/.
- English vowels are also shortened if they are followed by unstressed syllables:
  search–searching–searchable
  these three words have approximately the same length,
  e.g. in

SEARCH	*warrant*
searching	*EVERYWHERE*
searchable	*DOCUMENTS*

- You can find a description here:
  `http://spence.saar.de/phonetics/TIMING_two_problems/`

6.15

English short vowels: more examples

kit	dress	strap	lot	strut	foot
/kɪt/	/dres/	/stræp/	/lɒt/	/strʌt/	/fʊt/
[kʰɪt]	[d̪ɹ̝̊ɛs]	[st̪ɹ̝̊æp]	[lɒt]	[st̪ɹ̝̊ɐt]	[fʊt]

it fits him | big business stinks | Tim hit his shins | /ɪt fɪts hɪm/ /bɪg ˈbɪznɪs stɪŋks/ /*tɪm hɪt hɪz ʃɪnz/

let's get set | lead's heavy | a gem sale isn't the same as a jam sale | /lets get set/ /ledz ˈhevi/ /ə ʤem seɪl ɪz.nt ðə seɪm əz ə ʤæm seɪl/

the black cat tried to catch a rat | the back hatstand is for caps | /ðə blæk kæt traɪ̯d tu kætʃ ə ræt/ /ðə bæk ˈhætstænd ɪz fə kæps/

I want to wander in the tropics | Don Johnson is on top | /aɪ wɒnt tu ˈwɒndəɹ ɪn ðə ˈtrɒpɪks/ /*dɒn *ˈʤɒnsən ɪz ɒn tɒp/

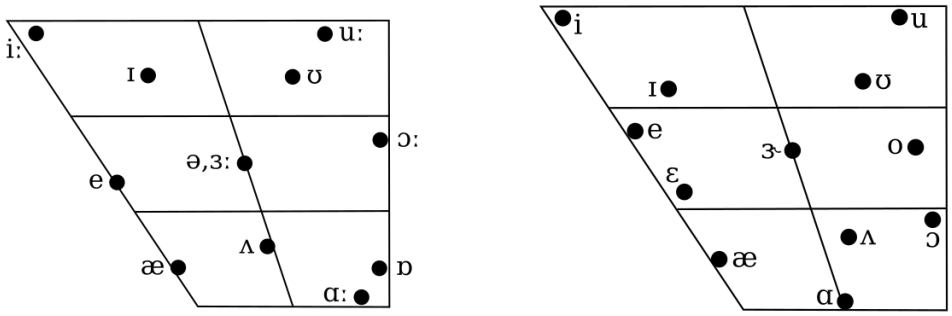
cut up the tough stuff | it's lovely honey and butter | /kʌt ʌp ðə tʌf stʌf/ /ɪts ˈlʌvli ˈhʌni ən ˈbʌtə (ˈbʌtər)/

look, full of books | Cook took a look | Cook took Brook's rook | /lʊk | fʊl əv bʊks/ /*kʊk tʊk ə lʊk/ /*kʊk tʊk *brʊks rʊk/

6.16

7 BrE and AmE vowel systems compared

BrE (RP) vs AmE (GA) monophthongs



Left: A fairly conservative variety of RP (Roach, 2004:242).
Right: General American (Wells 1982:486); note that vowel length is not distinctive in American English. The variety of GA shown here does not (yet) have the 'cot'-'caught' merger, so /ɑ/ and /ɔ/ are shown as separate vowels.

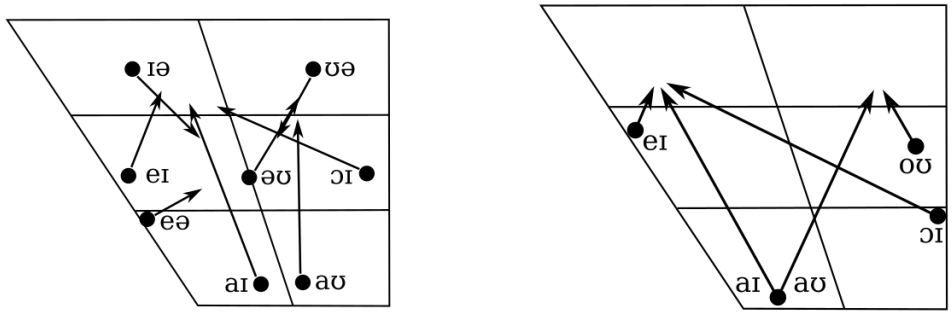
Sources:

Roach, Peter (2004), "British English: Received Pronunciation" (PDF), Journal of the International Phonetic Association, 34 (2): 239–245, doi:10.1017/S0025100304001768, S2CID 144338519

Wells, John C. (1982). Accents of English. Vol. 1: An Introduction (pp. i – xx, 1 – 278), Vol. 3: Beyond the British Isles (pp. i – xx, 467 – 674). Cambridge University Press. doi:10.1017/CBO9780511611766. ISBN 0-52129719-2, 0-52128541-0.

6.17

BrE (RP) vs AmE (GA) diphthongs



Left: Closing—not "rising" (!)—and centering diphthongs of a fairly conservative variety of RP (Roach, 2004:242).
Right: Closing—not "rising" (!)—diphthongs of General American (Wells, 1982:286). AmE does not have centering diphthongs.

Sources:

Roach, Peter (2004), "British English: Received Pronunciation" (PDF), Journal of the International Phonetic Association, 34 (2): 239–245, doi:10.1017/S0025100304001768, S2CID 144338519

Wells, John C. (1982). Accents of English. Vol. 1: An Introduction (pp. i – xx, 1 – 278), Vol. 3: Beyond the British Isles (pp. i – xx, 467 – 674). Cambridge University Press. doi:10.1017/CBO9780511611766. ISBN 0-52129719-2, 0-52128541-0.

6.18

Wikipedia's "diaphoneme" approach

- Wikipedia has a pronunciation key that attempts to cover all major vareties of English.
- It is biased towards AmE in some ways (e.g., it always represents post-vocalic r) but not in others.
- If you're interested: `https://en.wikipedia.org/wiki/Help:IPA/English`
- My aim for the next iteration of this course is to use the Wikipedia diaphoneme system for all phonemic transcriptions.
- The rest of this week's slides still use phonemic and phonetic transcriptions for BrE; AmE pronunciations will be discussed as they arise.

6.19

8 Sic transit gloria mundi

Centering diphthongs in (older) 'Broad' Australian English

- Older Australians speaking 'Cultivated' or 'Normal' AuE often found the 'Broad' accent aesthetically distasteful.
- Thomas Mann in *Der Tod in Venedig* raises the (old) philosophical question of whether true beauty is something perceived by the senses or something perceived by the intellect.
- The wonderful contrarian (phonetician, medi(a)evalist, etc., etc., etc.) Alex I. Jones, who was my first phonetics teacher back in 1975, described part of the AuE sound system as follows:
  Eight (8!) peripheral vowel phonemes can be realised either as centering diphthongs or as monophthongs.

ɪə	i̯ə	ʊə
ɛə		ɔə
æə	aə	ɒə

ɪː	i̯ː	ʊː
ɛː		ɔː
æː	aː	ɒː

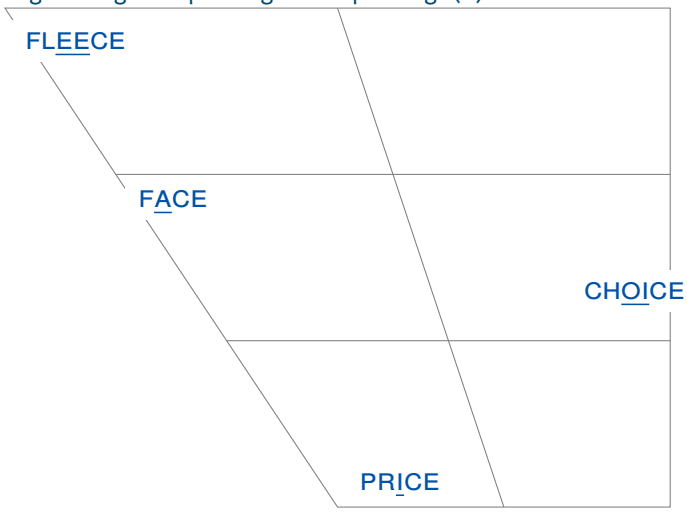
beard	bird	gourd
Baird		bored
bad	bard	gone

- Unfortunately, this system is now largely extinct.
- Omnia praeclara tam difficilia quam rara.
- Sic transit gloria mundi.

6.20

9 English long monophthongs and diphthongs

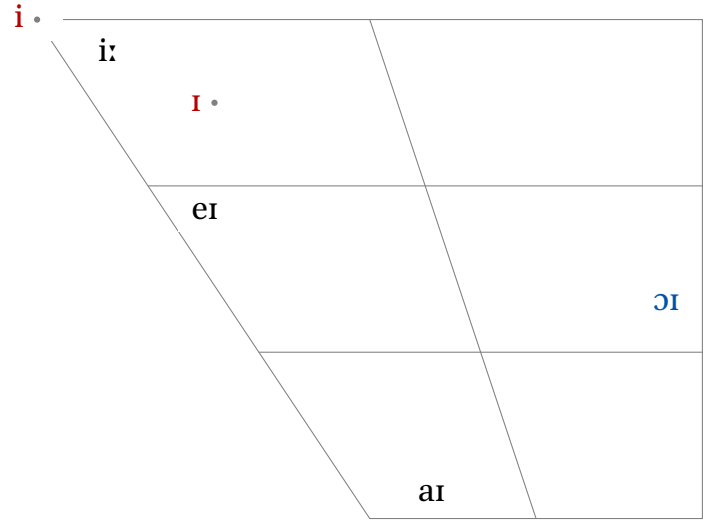
English long monophthongs and diphthongs (1): lexical sets



The FLEECE vowel can be diphthongi{s|z}ed (e.g. AuE).
The FACE vowel can be monophthongi{s|z}ed (e.g. AmE; Yorkshire).
The PRICE and CHOICE vowels are always diphthongs.

6.21

English long monophthongs and diphthongs (1): phonemes



6.22

English long monophthongs and diphthongs (1): examples

fleece	face	price	choice
/fliːs/	/feɪs/	/praɪs/	/ʧɔɪs/
[fl̥i˕s]	[fe̞ɪs]	[pɹ̥a̠ɪ̯s]	[ʧɔ̟ɪ̯s]

fleece	fleas	heat	heed	belief	believe	cease	seize
[fli˕s]	[fliːz]	[hi˕t]	[hiːd]	[bɪˈliːf]	[bɪˈliːv]	[si˕s]	[siːz]

face	phase	pace	pay	wait	wade	fate	fade
[feɪs]	[fe˕ɪz]	[pʰeɪs]	[pʰe˕ɪ]	[weɪt]	[we˕ɪd]	[feɪt]	[fe˕ɪd]

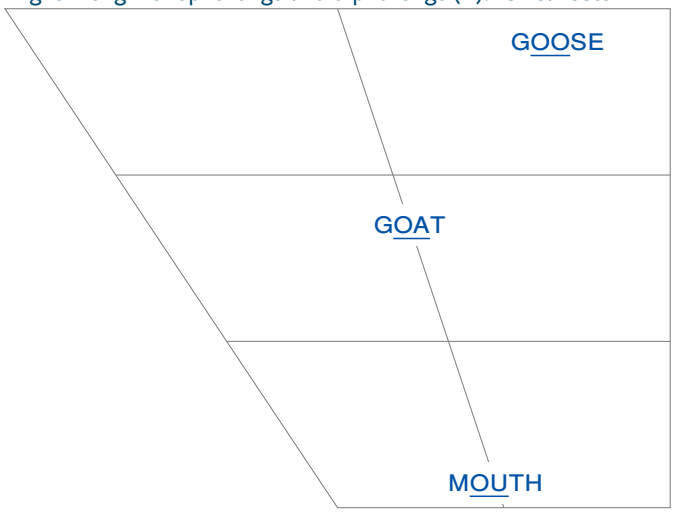
price	prize	ice	eyes	wright	ride	dice	die
[pɹ̥a̠ɪs]	[pɹ̥a˕ɪz]	[a̠ɪs]	[a˕ɪz]	[ɹʷa̠ɪt]	[ɹʷa˕ɪd]	[da̠ɪs]	[da˕ɪ]

choice	Choy's	Joyce	joys	quoit	coy	Boyce	boys
[ʧɔ̟ɪs]	[ʧɔ̟˕ɪz]	[ʤɔ̟ɪs]	[ʤɔ̟˕ɪz]	[kɔ̟ɪt]	[kɔ̟˕ɪ]	[bɔ̟ɪs]	[bɔ̟˕ɪz]

Vowel length [ː] is not *distinctive* in AmE.
We can write /iː/ as /i/ (contrasting with /ɪ/).
But AmE does have vowel clipping (vowels are shorter before fortis consonants than before lenis consonants), so for AmE we can write: ⟨hit⟩ [hɪt] ⟨hid⟩ [hɪːd] ⟨heat⟩ [hit] ⟨heed⟩ [hiːd]

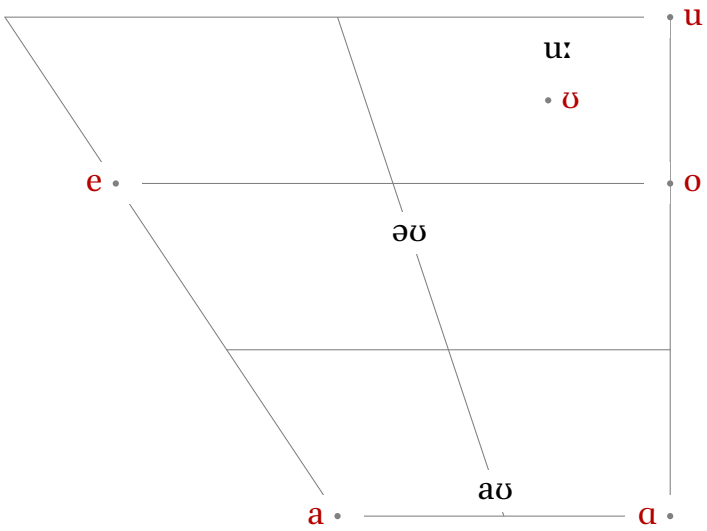
6.23

English long monophthongs and diphthongs (2): lexical sets



BrE: GOAT diphthong starts as central vowel [ə]
AmE: GOAT diphthong starts as back vowel [o]
Why is it possible for the GOAT vowel to vary so widely?
Hint: Shakespeare's "mewing" cat was *not* a kitten (!) /ɛʊ/→/juː/ 6.24

English long monophthongs and diphthongs (2): phonemes



AmE: GOAT diphthong starts as rounded close-mid back vowel [o]
AuE: GOAT diphthong starts as unrounded near-open central vowel [ɐ] 6.25

English long monophthongs and diphthongs (2): examples

goose	goat	mouth
/guːs/	/gəʊt/ (/goʊt/)	/maʊθ/
[gu̟ːs]	[gəʊ̯t] ([goʊ̯t])	[mɐ̟ʊ̯θ] [mɐ̟ʊ̯θ] [mʌʊ̯θ]

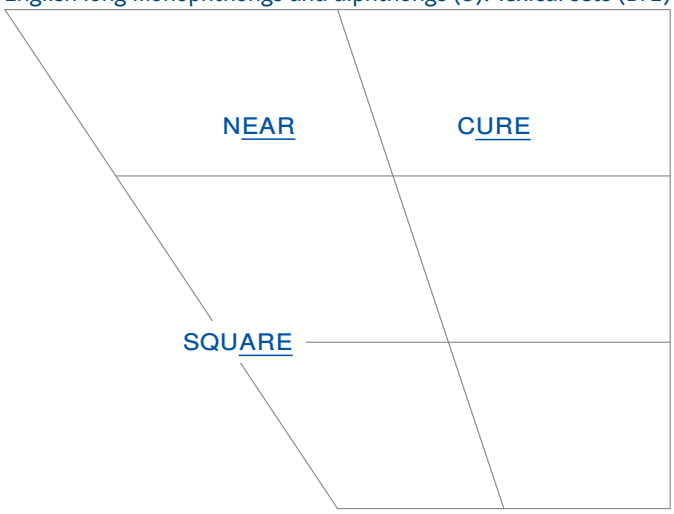
moot	mood	use (n.)	use (v.)	proof	prove
[mu̟ːt]	[mu̟ːd]	[ju̟ːs]	[ju̟ːz]	[pɹ̟̊u̟ːf]	[pɹ̟̊u̟ːv]

goat	goad	dose	doze	close (n.)	close (v.)
[gəʊ̯t]	[gəːʊ̯d]	[dəʊ̯s]	[dəːʊ̯z]	[kləʊ̯s]	[kləːʊ̯z]
[goʊ̯t]	[goːʊ̯d]	[doʊ̯s]	[doːʊ̯z]	[kloʊ̯s]	[kloːʊ̯z]

mouth (n.)	mouth (v.)	house (n.)	house (v.)	bout	bough
[maʊ̯θ]	[maːʊ̯ð]	[haʊ̯s]	[haːʊ̯z]	[baʊ̯t]	[baːʊ̯]

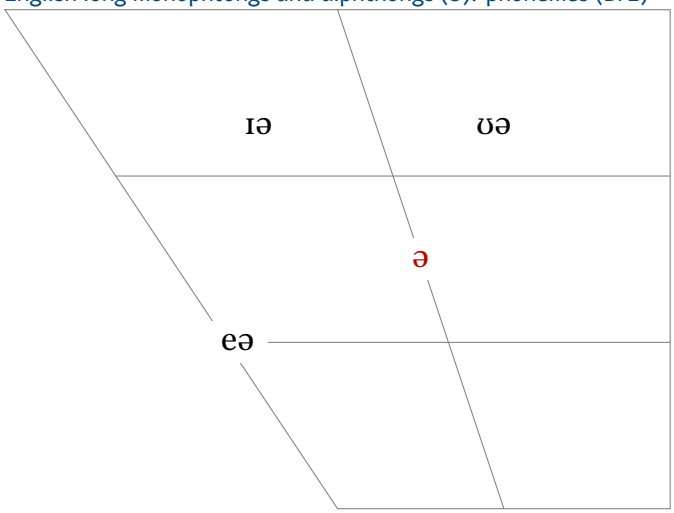
Whose shoe's loose? Sue knew. Hugh's tune is due in June. (/juː/ or /uː/ in AmE? Spoiler: is the preceding consonant alveolar?)
I suppose so. It's Flo's go. Oh no, don't go home alone.
How now, brown cow? Out out, town mouse! Clouds and showers. 6.26

English long monophthongs and diphthongs (3): lexical sets (BrE)



6.27

English long monophtongs and diphthongs (3): phonemes (BrE)



In Modern General British, /ʊə/ has become /ɔː/.
In AuE, /ʊə/ has split into two syllables: /uʷ.ə/
In Modern General British, /ɛə/ has become /ɛː/.
If a 'system' has only *one* term (/ɪə/), is it still a system??

6.28

English long monophthongs and diphthongs (3): examples

near	square	cure	
/nɪə̯/	/skweə̯/	/kjʊə̯/	
[nɪ˕ə̯]	[skwɛ˕ə̯]	[kjʊ˕ə̯]	[kjɔː]

pierce	peers	fierce	fear	weird	beard
[pʰɪə̯s]	[pʰɪ˕ə̯z]	[fɪəs]	[fɪ˕ə]	[wɪ˕əd]	[bɪ˕əd]

scarce	scares	there	their	they're	mayor	prayer
[skɛə̯s]	[skɛ˕ə̯z]	[ðɛ˕ə̯]	[ðɛ˕ə̯]	[ðɛ˕ə̯]	[mɛ˕ə̯]	[pɻ̊ɛ˕ə̯]

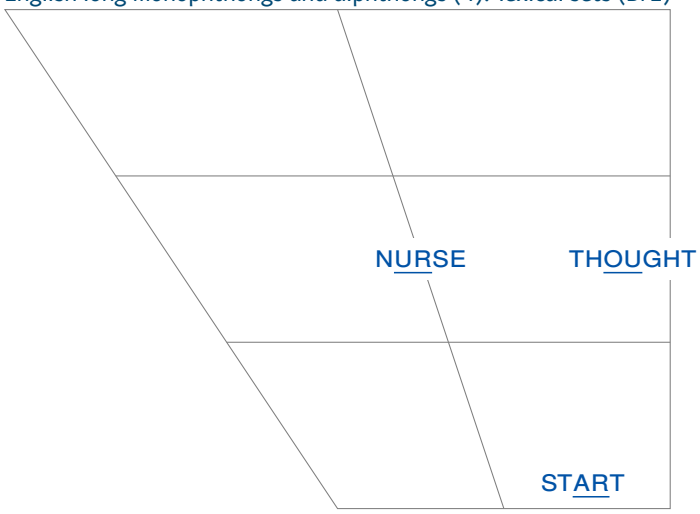
your	you're	sure	pure	poor	Europe
[jʊ˕ə̯]	[jʊ˕ə̯]	[ʃʊ˕ə̯]	[pj̊ʊ˕ə̯]	[pʰʊ˕ə̯]	[ˈjʊ˕ə̯ɹ̝.əp]

NB: In American English, there are no cent(e)ring diphthongs, only vowel + r.

Here and there, we're aware of Peter Pears paring a pair of pears.
Here they're all ours; there they're all theirs. (Try both BrE and AmE!)
Jean Ure /jʊə/ (AmE /jʊr/) was a great linguist.
Are you sure (recent BrE /ʃɔː/ ⟨Shaw⟩)? No, I'm Shakespeare!

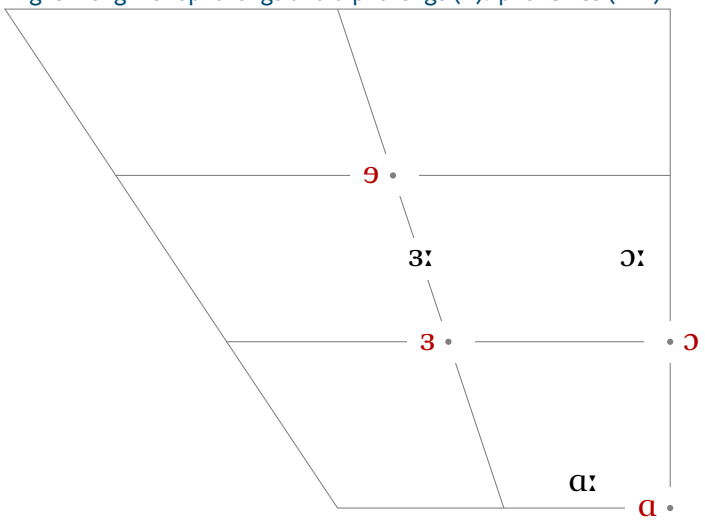
6.29

English long monophthongs and diphthongs (4): lexical sets (BrE)



For non-rhotic varieties:
⟨fort⟩ /fɔːt/ ⟨thought⟩ /θɔːt/
⟨start⟩ /stɑːt/ ⟨bra⟩ /brɑː/
⟨nurse⟩ /nɜːs/ ⟨Moebius⟩ /mɜːbiəs/ (Does AmE have non-rhotic /ɜː/??) 6.30

English long monophthongs and diphthongs (4): phonemes (BrE)



6.31

English long monophthongs and diphthongs (4): examples

start	nurse	thought
/stɑːt/	/nɜːs/	/θɔːt/
[stɑ̟ˑt]	[nɜ̟ˑs]	[θɔ̟ˑt]

part	staff	starve	cars	bar	bra
[pʰɑˑt]	[stɑˑf]	[stɑːv]	[kɑːz]	[bɑː]	[bɹ̟ɑː]

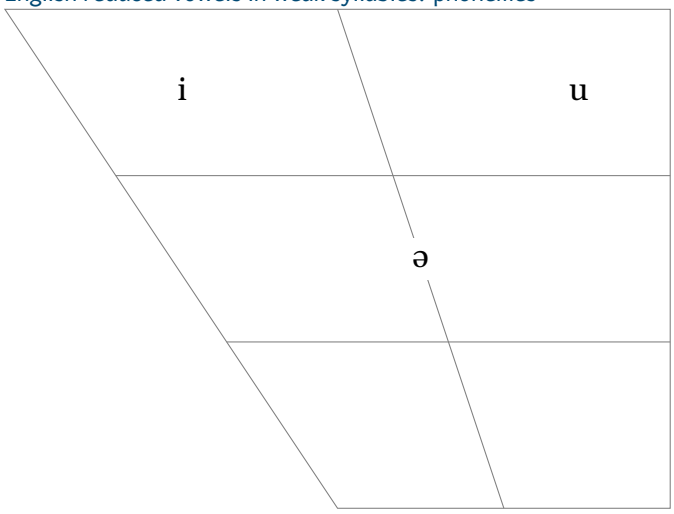
search	surge	merch	merge	fir	prefer	fur
[sɜˑʧ]	[sɜːd͡ʒ]	[mɜˑʧ]	[mɜːd͡ʒ]	[fɜː]	[pɹ̟i.ˈfɜː]	[fɜː]

law	war	court	cord	course	cores	sauce	saws
[lɔ̟ː]	[wɔ̟ː]	[kʰɔ̟ˑt]	[kʰɔ̟ːd]	[kʰɔ̟ˑs]	[kʰɔ̟ːz]	[sɔ̟ˑs]	[sɔ̟ːz]

Ma parks Pa's car | last dance, last chance | a large farmyard
Percy turned, when he heard the girl's words | birds searched the earth for worms
you're four boards short | Lord Gordon caught naught | coarse gorse tore your horse 6.32

10 English reduced vowels in weak syllables

English reduced vowels in weak syllables: phonemes



6.33

11 Homework ;-)

Homework ;-)

- Read the following pages of an article by Benjamin Lee Whorf, entitled 'Language as an Exact Science', originally published in *Technology Review* in December 1940:
  `http://www.spence.saar.de/phonetics/syllablestructure/Whorf_Syllable_Structure.pdf`
- Is Whorf's formula for the structure of English monosyllabic words correct?
- The following documents attempt to list all possible combinations of consonants that can occur in initial and final position in an English monosyllabic word:
- `http://www.spence.saar.de/phonetics/syllablestructure/initials.pdf`
- `http://www.spence.saar.de/phonetics/syllablestructure/finals.pdf`
- Are the lists complete? Are they correct?

6.34