

Consonant and vowel symbols for broad transcription of Western Canadian English Ling 205 T. Nearey 2005

Consonants

Symbol	Keywords	VPM	Special names
p	pie, sleepy, tip	vls bilabial. stop	
b	buy, about, dab	vcd bilabial. stop	
t	tie, atop, pat	vls alveolar stop	
d	dim, adore, lad	vcd alveolar stop	
k	kill, locker, sack	vls velar stop	
g	gill, logger, pig	vcd velar stop	
f	fill, coffee, if	vls labiovelar fricative	
v	vet, movie, stove	vcd labiovelar fricative	
θ	thing, ether, both	vls dental fricative	theta ['θetə]
ð	this, either, breathe	vcd dental fricative	edh [εð] or thorn
s	see, fussy, mess	vls alveolar fricative	
z	zoo, maze, Oz	vcd alveolar fricative	
ʃ	shoe, bishop, ash	vls postalveolar fricative	esh [εʃ]
ʒ	Zsa Zsa, azure, rouge	vd postalveolar fricative	ezh [εʒ]
m	mouse, amo, aim	(vcd) bilabial nasal	
n	no, any, on	(vcd) alveolar nasal	
ŋ	__, singer, wing	(vcd) velar nasal	ing [ɪŋ] or engma
l	lousy, solo, bull	(vcd) alveolar lateral (approximant)	
ɹ	ring, around, or	(vcd) retroflex approx	
j	yell, union, __	(vcd) palatal approx	yod [jod]
w	we, tower, __	(vcd) labiovelar approx	
ʔ	'uh - [ʔ] - oh'	(vls) glottal stop	glottal stop
ʍ	<i>which, what</i> (dial.)	vls labiovelar approx = [w̥]	turned 'w'
h	<i>how, hat</i>	vls glottal fricative	

Notes:

- 1) vls = voiceless, vcd = voiced, approx = approximant
- 2) terms in (...) need not be mentioned, but can be
- 3) V P M = voicing place and manner
- 4) Lateral approximant can be viewed as a special manner class
- 5) Retroflex can be taken as a special place of articulation

Vowels of Western Canadian English (WCE) for broad transcription

Symbol	Keywords	THAR	Special names
i	tea, see	tns higher high front unr	
ɪ	tip, sing	lax lower high front unr	small cap 'i'
eɨ	pay, deign	tns mid front unr	
ɛ	pet, head	lax mid front unr	epsilon
æ	pat, dad	(lax?) lower low front unr	ash or digraph 'a''e'
ɑ	calm, pot	tns low back unr	script 'a' or back 'a'
ow	toe, row	tns mid back rnd	
ʊ	put, foot	lax high back rnd	small cap 'u'
u	food, prune	tns high back rnd	
ʌ	but, sung	lax higher low central unr	caret, wedge, turned 'v'
aj	buy, bite	tns low central unr	
aw	cow, house	tns low central unr	
ɔj	boy	tns lower mid back rnd	
ɑjɪ	fire		
awɪ	hour		
ɪɪ	fear, beer		
ɛɪ	marry, bare		
ʊɪ	tour, mooring		
ɔɪ	tor,		
ɜɪ	bird, curry		(turned epsilon + r)
ə		lax mid central unr (weak)	schwa
əɪ	butter		

Notes: tns = tense; unr = unrounded; rnd = rounded;

- 1) These are very close Rogers' description (p. 124) Canadian English. I will [ɜɪ] for primary or secondary stressed syllables as I like to reserve schwa for the vowel that occurs only in weak, unstressed syllables. You can use [əɪ] instead if you like.
- 2) The vowel transcribed as /ɑ/ is actually probably closer to /ɒ/ for most WCE. That is a tense lower low back **rounded** vowel.
- 3) Vowel quality of high and mid before /r/ is debatable and varies a lot from region to region. Most Cdn dialects (and many US) do not have a distinction between tense and lax vowels in this environment. Personally, I think the vowel qualities of 'fear' and 'bare' are more like ['fiɪ] and ['beɪ] than ['fiɪ] and [beɪ] and 'bore' is tossup between ['toɪ] and ['tɔɪ] (similarly 'tour' is somewhere between ['toɪ] and ['tuɪ]. I will accept either in broad transcription.
- 4) There are several flavors of weak vowels. In addition to schwa / ə / , there is a very short, somewhat higher version of /ɪ/ that I will sometimes transcribe as /ɪ/ or as /i/. There is also a weak version of /i/ that I will transcribe as /ɨ/ or as /ɨ/ or as /i̯/. You can call these *weak small cap 'I'* and *weak 'i'*

English vowels

Narrow transcription

Basic vowel description

- The basic descriptors for vowels are HAR
 - Height
 - Advancement
 - Rounding
- It is useful to subdivide each height class into a ‘higher’ and ‘lower’ subdivision
 - You should learn all the heights in the next chart

Main vowel symbols of GA and WCE

Front	Central	Back*	Height
[i] ‘beat’		[u] ‘boot’	<i>higher high</i>
[ɪ] ‘bit’		[ʊ] ‘book’	<i>lower high</i>
[e] ‘bait’		[o] ‘boat’	<i>higher mid</i>
[ɛ] ‘bet’	[ə] ‘sofa’	[ɔ] ‘bought, GA’	<i>lower mid</i>
	[ʌ] ‘but’	[ɒ] ‘Bob, bought WCE’	<i>higher low</i>
[æ] ‘bat’		[ɑ] ‘Bob, GA’	<i>lower low</i>

- Back vowels except [ɑ] are rounded; the rest are unrounded
- [ɒ] is described as lower low in your text and IPA. I’ll take either. It is **ROUNDED**
- [e] and [ə] are the first part (nucleus) of the diphthongs [ej] and [əw]

Tense and Lax

- English phonology traditionally makes the distinction between tense and lax vowels
 - This is not phonetically well-defined as a single characteristic
 - You just need to learn which vowels are classed as tense and lax
- This distinction based mainly on phonotactics
 - Phonotactics is the description of which sounds can occur together in a legal word or syllable of a language

Occurrence of TENSE Vs

- Vowels called ‘**tense**’ occur freely at the ends of **one syllable** words
 - i, eɪ, u, oʊ, ɒ (ɑ and ɔ in GA)
 - Also tense : əj, aʊ, ɔj
- **Examples** :
 - ‘bee’, ‘bay’, ‘too’, ‘tow’, ‘law’ (‘spa’ and ‘law’ in GA)

Occurrence of LAX Vs

- Vowels called ‘**lax**’ can mostly occur in one syllable words only if they end in a consonant
 - I, ε, ʊ, ʌ, æ,
 - Also **lax** : weak vowels like ə
- **Examples** : ‘bit’, ‘bet’, ‘put’, ‘but’, ‘bat’
 - No easy examples of these vowels at ends of 1-syllable English words
 - Try to think of some

Duration patterns tense and lax vowels

- Tense vowels are longer than lax vowels of the same general height class
 - /i/ longer than /ɪ/ /u/ longer than /ʊ/
 - /eɪ/ longer than /ɛ/
- The tense back vowels /oʊ/ and /ɒ/ (both /ɑ/ and /ɔ/ in GA) are longer than the lax central /ʌ/
- An **exception** to the ‘lax vowels shorter than tense’ is /æ/
 - It is often as long as any other vowel

Length of tense v. lax vowels: All other things being equal

- Vowel length in English is affected by many factors
- *All other things being equal*, a tense vowel is longer than a lax vowel of a *similar height*
 - (Exception /æ/ is not shorter than low tense vowels (e.g., /ɒ/)

Transcribing vowel length for tense vs lax vowels

- In a narrow transcription we can indicate relative length of vowels by diacritics
 - [ɑː] Slightly longer than ‘baseline’
 - [ɑ:] Substantially longer than ‘baseline’
- Rogers suggests
 - Tense vowels with two symbols don’t ever need extra marks (natural to assume [eɪ] longer than [e])
 - Tense vowels with one symbol could be written with single raised dot [ɑ˙]

Allophonic vowel length: pre voiceless obstruents

- Vowel length in English is affected by many factors
- *All other things being equal*, a vowel is shorter when it is before a voiceless consonant in the same syllable
 - E.g.
 - /æ/ in ‘bat’ is shorter than in ‘bad’ or ‘ban’
 - /ɛ/ in ‘bet’ is shorter than in ‘bed’ or ‘bell’
 - /i/ in ‘beat’ is shorter than in ‘bead’ or ‘bees’ or ‘bee’

Moderately narrow transcription of length

- Ordinarily, we will not transcribe vowel length even in narrow transcriptions
- On special occasions when attention is focused on length you should know a three way ranking for 1-syllable words
- From longest to shortest: Three degrees of length
 - 1) Lax vowel before voiceless consonant:
 - ‘bit’, [bit]
 - 2) Lax vowel before voiced consonant or tense vowel before voiceless consonant (these are about the SAME length)
 - ‘bid’ [brɪd]; ‘beat’ [bi:t]
 - 3) Tense vowel elsewhere (before voiced consonant or at end of word)

Length transcription conventions 1 syllable words

- From longest to shortest: Three degrees of length for one-symbol vowels
- 1) Lax vowel before voiceless consonant:
‘bit’, [bit]
- 2) Lax vowel before voiced consonant or tense vowel before voiceless consonant (these are about the SAME length)
‘bid’ [brɪd]; ‘beat’ [bi:t]
- 3) Tense vowel elsewhere (before voiced consonant or at end of word)
‘be’ [bi:], ‘bead’ [bi:d]

This is a little different from Rogers

- The above is for special exercises only.
- Actual facts of vowel duration in English are very complex
- My rules are closer to the truth than Rogers, but it's impossible to nail this down simply in a narrow transcription
- Our transcription in special exercises will be only to illustrate that we know the following reliable facts:
 - Tense vowels are longer than similar lax vowels
 - Vowels before voiceless consonants are shorter than the same vowel before voiced consonants (or at end of word)

Another source of length variation: Stress

- Vowel length in English is affected by many factors
- *All other things being equal*, a vowel with primary stress is longer than one with secondary stress
 - Vowel with weak stress is shortest of all
- This is too much detail to note in transcription
 - We run out of diacritics!!!
- But you should still know that more stressed vowels are longer than less stressed vowels in English
 - (It's part of how we know what vowels are stressed)

Other variations length: prosodics, rate More things we **won't** transcribe

- Vowel length in English is affected by many factors
- Vowels in various positions in longer utterances get shorter or longer depending on position
- All other things being equal
 - Vowels in syllables at ends of phrases get longer : pre pausal lengthening
 - Vowels in two syllable utterances are shorter than those in one syllable utterances. 'Dog' in 'Dog' than in 'Bad dog'
 - Vowels in a 'tonic' syllable (most emphasized syllable) of a phrase longer than those not in tonic syllable
 - S1: 'You're a good DOG', S2: 'You're a GOOD dog'
 - Dog longer is S1 than S2

Nasalization of vowels One more thing we WILL transcribe with diacritic

- Vowels in English are noticeably nasalized when they occur before nasal consonants in same syllable
 - 'ban' /bæn/ [bæ̃n]
 - 'bin' /pɪn/ [bɪ̃n]
- Rogers suggests there is also nasalization after nasal C's
 - But this is quite minor compared to nasalization before nasal consonants
 - 'nab' vs 'ban'

Some special cases: Vowels before /ɪ/

- Dialects of English do not show a full inventory of tense and lax vowels before /ɪ/
- Following the text, I will use 'lax vowel' symbols for most 'simple' pre-r vowels, though many sound at least as close to the nearby tense one
 - Exceptions
 - Lower mid vowel in 'bore' /bɔɪ/
 - Low vowel in 'bar' /baɪ/ or /bɑɪ/
- Rather than argue, I will accept alternates in next chart

Example WCE vowels before /ɪ/

Word	Rogers	Alternate
'beer'	bɪɪ	bɪɪ
'bare'	bɛɪ	bɛɪ
'tour'	tʊɪ	tʊɪ
'bore'	bɔɪ	bɔɪ
'bar' (tense!)	bar	bɑɪ

Note also before /ɪ/

- Diphthongs /aj aw ɔj / also occur before /ɪ/
 - 'fire', 'flour', 'coir'
 - (last word rare = 'coconut husk fibre')
- Some dialects have more vowels before /ɪ/
 - 'cheery', 'Mary', 'merry', 'marry', 'Murray'
- Some have fewer
 - 'shore', 'lure', 'sure', 'bore', 'tour'

Other curious environments / ɨ ʃ (g ʒ)/

- Text notes that mainly only lax vowels occur before ɨ ʃ
 - Some related restrictions apply to /g/ and /ʒ/ in some dialects
- There are some exceptional words, onomatopoea and borrowings
- Not too important... but we'll check some facts of local pronunciation

WCE Vowels pre /ŋ /

- Facts not well documented in WCE--lets' check /ŋ/
 - 'ping' 'ring'
 - '(Mr) Peng'
 - 'pang'
 - 'Hong Kong' (tense vowel !!!)
 - 'long' (tense vowel !!!)
 - 'hung'
- Any other vowels?
 - Hint : old McDonald

WCE Vowels pre / g /

- Facts not well documented in WCE--lets' check /g/
 - 'league'
 - 'pig'
 - '(the) Hague'
 - 'bag'
 - 'bug'
 - 'berg'
 - '(the) Frug'
 - 'sugar'
 - 'dog'
 - 'hog'
- Any other vowels?

For your edification

- en.wikipedia.org/wiki/Frug
- The Frug was a dance craze from the 1960s that evolved from another dance of the era, The Chicken. The Chicken, which featured lateral body movements, was used primarily as a change of pace step while doing The Twist. As young dancers grew more tired they would do less work, moving only their hips while standing in place. They then started making up arm movements for the dance, which prompted the birth of The Swim, The Monkey, The Dog, The Watusi, and The Jerk. en.wikipedia.org/wiki/Frug

WCE Vowels pre /ʃ ʒ /

- Again facts not well documented-- lets' check
- 'leash', 'leige' (rare before /i/ - but easy)
- 'wish'
- 'fresh'
- 'crash'
- 'slosh'
- 'push'
- 'wash'

Words with tense vowels before / ʃ ʒ /

- Again facts not well documented-- lets' check
- 'leash', 'leige'
- 'woosh', 'swoosh' 'douche', 'rouge', 'luge'
- 'wash' 'slosh' 'Taj (Mahal)'
- 'slosh'
- 'push'
- 'wash'

Vowels before [ɫ]

- Vowels before dark l are often 'retracted' ('backer') than usual
- Sometimes there is a [ə] like or [ʊ] component
- 'Trail' vs 'trade' [t^hɪe^əɫ] vs [t^hɪeɪd]
- Some dialects show 'monophthongization' of some back vowels
 - 'coal' [k^ho:ɫ] rather than [k^hoʊwɫ]
- Some dialects have lost some vowel distinctions before l.
 - Salt Lake City 'steel' and 'still'

Phonemes

English consonants: Phonemes and Allophones

Effects related to aspiration and
'devoiced' voiced sounds

(pdf of) PPT without pix

- Strict, detailed definitions of the term phoneme are complex
 - Not part of this course
 - Take phonology courses to fight over the details
- Rough and ready idea is indispensable for practical phonetics
 - Must make a distinction between phonemic and allophonic differences

Rough definition of phoneme

- Phoneme (*Concise Dictionary of Linguistics*, Oxford U. Press 1997)
- “The smallest distinct sound unit in a given language: e.g. /^htɪp/ in English realizes the three successive phonemes, represented in spelling by the letters *t*, *i*, and *p*.”

Phonemic differences vs. allophonic differences

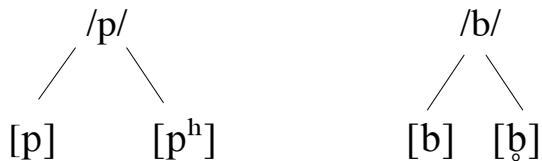
- Differences in speech sound that can signal differences between two different words are *phonemic differences*
- Other differences in speech sound that are clearly audible are only *allophonic differences*
 - ‘pronunciation variants’ that cannot signal different words.

Representing allophonic differences

- ‘Broad’ (= coarse-grained) transcription enough for phonemic representation
 - Choose simple symbol for a ‘representative’ (allo)phone
- ‘Narrow’ (= fine-grained) transcription often requires diacritics
- Diacritics for stops
 - p^h - aspirated p
 - p[̚] - ‘p with inaudible release’ (‘unreleased p’)
 - b̥ - ‘(partially) devoiced b’

Answer: ‘pie, spy, buy’

Phonemes in ‘/’ (slash or solidus, pl solidi) marks



Phones in square brackets

Examples: ‘pie, spy, buy’

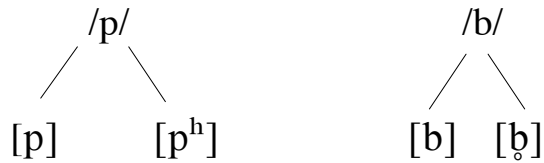
- ‘pie’ [ˈp^haj]
- spy [ˈspaj]
- ‘buy’ [ˈb̥aj] or [ˈbaj]
- Which of [b̥] [p^h] [p] are allophones of the same phoneme?

Examples ‘Stop.’, ‘Stop!’, ‘Stop!!’, ‘Stob!’

- ‘Stop.’ [ˈstap[̚]]
- ‘Stop!’ [ˈstap]
- ‘Stop!!’ [ˈstap^h]
- ‘Stob!’ [ˈstab] or [ˈstab̥]
- Which of [b] [p^h] [p] are allophones of the same phoneme?

Answer: ‘Stop(!!!) Stob.’

Phonemes in ‘/’ (slash or solidus, pl solidi) marks



Phones in square brackets

Rough notation

Conditioned allophone: The phoneme /X/ is realized as phone [y] in environment between A and B

/X/ --> [y] / [A] _ [B]

Allophone in **free variation**

/X/ --> [y] or [z] (optionally)

Example allophone rule

/p/ --> { [pʰ] / #__
{ [pʰ] / ǃ__'V
{ [p̚] / __# (optionally)
{ [p] / s__
{ [p] elsewhere

= ‘word boundary’

ǃ = ‘weak stressed’ or ‘unstressed’ or ‘reduced’ vowel’

'V = primary- stressed full vowel

,V = secondary-stressed (full)

Translation

- The phoneme /p/ is realized as an aspirated p (the phone [pʰ]) at the beginning of a word or between a weak vowel and a stressed vowel.
- It is realized optionally as an unreleased (inaudibly released) p (the phone [p̚] word finally
- It is realized as an ordinary voiceless (un- or weakly- aspirated) stop after /s/ and elsewhere.

Allophone rule sheet to follow

- We will examine some important allophones in English Cs and Vs
 - Then I'll handout rule summary (and post on web)
- For details see Chapter 3 of Rogers and Appendix F (p 292 - 298)
 - Our rules will be much shorter

Allophones of stops: Aspiration and release

- Consider the following words
- 'tip', 'pit', 'spit', 'plum', 'queen', 'apt'
- Broad and Narrow transcriptions
- 'Line drawings' showing relative timings of constrictions at articulators
 - (See Rogers p 25-27 for overview)

Allophones of Consonants

- Many important details in English 'narrow phonetics' related to voiced/voiceless distinction in obstruents

Aspiration etc. 'pit, spit'

'pit'

/ 'pɪt / [p^hɪt^h], [p^hɪt^ˀ], [p^hɪt]

'spit'

/ 'spɪt / [s^hpɪt^h], [s^hpɪt^ˀ], [s^hpɪt]

/p, t, k/ **always** aspirated at beginnings of words in stressed syllables (always)

Never aspirated after /s/.

Variable word finally, often with inaudible release ('unreleased')

Timing diagram Rogers p 51

More articulators (assignment 2)
Rogers p 35

My timing drawings: glottal states

- Voiceless states of **glottis**
 - =:::=: Slightly open (as in aspiration or [h])
 - ==== Closed tight as in [ʔ]
 - Unknown (either === or =:::=)
- Voiced state of **glottis** (typing)
 - vvvvvvvvv -- voicing (folds buzzing)
- Voice-ready (typing)
 - xxxxxx -- vocal folds about ready to voice but not buzzing

My timing drawings: articulators

- Rogers' "velic" = my "VPPort"
- Typing:
 - Closed articulator
 - < Opening articulator (<<<< longer opening)
 - > Closing articulator
 - =:::=: Slightly open (as in fricatives)
 - ::~::~: Pretty open articulator (as in approximants)
 - ooooooo Quite open articulators (as in vowels)

Timing diagrams See Rogers p. 51 fig 3.3

/d a / *Negative VOT*
 Coronal —<ooooooooooooo *Voicing starts before <*
 Glottal vvvvvvvvvvvvvvvvv (*voicing leads opening*)

/ t a / *Near Zero VOT*
 Coronal —<ooooooooooooo *Voicing starts at <*
 Glottal ::=:::vvvvvvvvvvvvvvvv (*short voicing lag*)

/t^h a / *Positive VOT*
 Coronal —<ooooooooooooo *Voicing starts after <*
 Glottal ::=:::vvvvvvvvvv (*long voicing lead*)

English ‘partly voiced’ stops (see Rogers’ p 47.)

[d a] *Fully voiced ‘d’*
 Coronal —<ooooooooooooo *Voicing starts before <*
 Glottal vvvvvvvvvvvvvvvvv (*voicing leads opening*)

[ɸ a] *Devoiced ‘d’*
 Coronal —<ooooooooooooo *Voicing tries to start at or before <*
 Glottal xxxvvvvvvvvvvvvvvvv (*voicing leads opening*)

[t a] *Unaspirated ‘t’*
 Coronal —<ooooooooooooo *Voicing starts shortly after <*
 Glottal ::=:::vvvvvvvvvvvvvvvv

Devoiced ‘d’ and unaspirated ‘t’ may often be perceptually equivalent

Obstruents weakly voiced in English

- Many languages work hard to keep voicing going during obstruents
 - E.g. French, Russian
- English does not
 - Phonemically voiced stops, fricatives and affricates only likely to show true voicing during constriction when they are between voiced sonorants (approximants and vowels)

Examples

- /^hba'bab_sə'bab/ -->
 [^hba'bab_sə'bab]
- /^hza'zaz_sə'zaz/ -->
 [^hza'zaz_sə'zaz]

[d̥] vs. [t] ? Any real difference

- ‘Devoiced’ obstruents can be very similar to voiceless unaspirated sounds with respect to ‘actual’ voicing
- Small differences may remain in ‘excitation’ from larynx
 - Other ‘secondary features’ of ‘devoiced voiced’ sounds resemble ordinary voiced sounds
 - so they may **sometimes** be perceptually separable

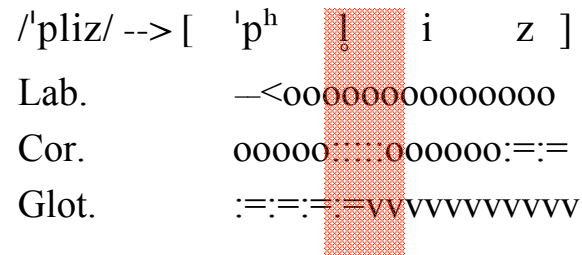
Secondary features of Voiced vs voiceless obstruents

- | | |
|---|--|
| <ul style="list-style-type: none"> • Voiced <ul style="list-style-type: none"> – Lower amplitude of burst or frication <ul style="list-style-type: none"> • (= ‘less loud’) – Constriction duration shorter (VCV) – Preceding vowels longer (VC) | <ul style="list-style-type: none"> • Voiceless <ul style="list-style-type: none"> – Higher amplitude of burst or frication <ul style="list-style-type: none"> • (= ‘louder’) – Constriction duration longer (VCV) – Preceding vowels shorter (VC) |
|---|--|

Side effects

- So far we’ve looked mainly at allophones of voiced and voiceless obstruents themselves
 - Some special things happen to things next to obstruents
 - e.g. vowels are shorter before voiceless obstruents
- Next: Effects on approximants next to aspirated obstruents

‘Spill-over’ effects of aspiration



Open glottis (aspiration) extends through much of /l/

Flapping (tapping)

- Flapping (tapping)
 - /t/ and /d/ often realized as [ɾ] / 'V__ ǃ
 - Voiced alveolar flap (or tap) between stressed and 'weak' vowel
 - This is 'opposite' of one good aspiration environment ǃ__'V
 - Roughly speaking
 - » aspiration makes stops 'more devoiced and less sonorant'
 - » flapping makes /t,d/ 'more voiced and more sonorant'
- **Example:**
'attack' [ə't^hæk] vs. 'attic' [ˈæɾɪk]

Place assimilation and coarticulation

- Small changes in place of articulation in some consonants
 - Alveolar consonants become dental before θ ð
 - 'tenth' /'tenθ/ --> [ˈtɛnθ]
 - 'width' and 'stealth' may show similar changes in /d/ and /l/
- Stops
 - Labialized before rounded vowels [w] and [ɹ]
 - 'dwell' [ˈd^wwɛɫ]; 'Gwen' [ˈg^wwɛn], 'twin'; [ˈt^{wh}wɪn] or (?) [ˈt^wɪn],

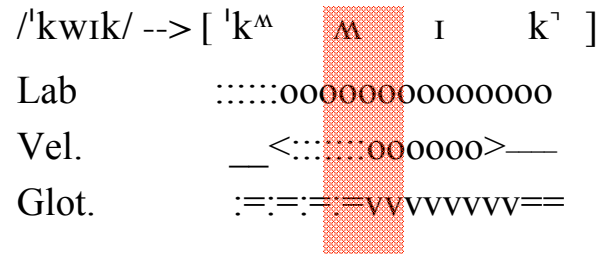
Flapping more examples

- Example from child's speech
 - Baby: 'Daddy' [ˈdæ,di]
 - Toddler: 'Daddy' [ˈdæri]
 - 5-year old (extra polite): 'Daddy' [ˈdæ,t^hi]
- More examples
 - 'buddy' /'bʌdi/ --> [ˈbʌɾi]
 - 'butter' /'bʌdə/ --> [ˈbʌɾə]
 - 'sitter' /'sɪtə/ --> [ˈsɪɾə]
 - 'city' /'sɪti/ --> [ˈsɪɾi]

Complex coarticulation in /stop+r/

- /t/ and /d/ retroflexed, rounded (and possibly affricated) before /ɹ/
 - 'train'
 - [ˈt^hɹɛjn] or [ˈt^s^wɹɛjn] or maybe even [ˈt^s^wɹɛjn]
 - Kids sometimes spell 'train' as 'chrain'
 - 'drain'
 - [ˈd^ɹɛjn] or [ˈd^z^wɹɛjn]

‘Spill-over’ effects aspiration and rounding coarticulation.



Broad transcription /kʷɪn/ / Open glottis (aspiration) extends through much of /w/, yielding [w̥] or [ʷ]

AK shows mainly pharyngeal constr. in [ɬ] Articulation of some laterals (sagittal MRI tracings)

Laterals from MRI <http://www.icsl.ucla.edu/~spapl/projects/mripix/figg3.html>

Clear and dark ‘l’ in NA Eng.

- At beginning of syllables in N.A. English, /l/ is relatively ‘clear’ [l]
- At end of syllables, it is relatively ‘dark’ [ɫ]
 - Often described as ‘velarized’ but may more often be pharyngealized
 - Dark [ɫ] often shows up as a ‘syllabic’ l
 - We will not systematically distinguish it from schwa+dark l
- Examples
 - ‘pal’ [pʰæɫ] v. ‘lap’ [læp]
 - ‘little’ [lɪrɪɫ] or [lɪrɫ]

Syllabic nasals and glottal stop

- ‘Mountain’, ‘sutton’, ‘sudden’
 - Broad transcription /mawntən/ /bʌtən/, /sʌdən/,
 - Narrow transcription (casual pronunciation)
- ‘Mountain’ [mawnʔn̩] or [mawnʔt̩]
- ‘Button’ [bʌʔn̩] or maybe [bʌʔt̩]
 - See Rogers p 55 “RP Glottalization”
 - Something much like this may happen frequently in NA English
- ‘Sudden’ [sʌr̩n̩], ‘reddeɪn’ [ɹɛr̩n̩]

Some additional details

- Most of the things so far might show up on a quiz for ‘moderately narrow’ transcription
 - NOT on this Thursday’s quiz
- Some additional details will not show up in any **transcription quiz** ever
 - (Some facts discussed might be addressed in multiple choice questions)

‘Inherent’ rounding in some Cs

- N.A. English /ɹ/ is pretty strongly rounded
 - Rogers p 60.
 - *Could** be transcribed most accurately [ɹ^w]
 - /ʃ, ʒ, tʃ, dʒ/ are also somewhat rounded (compared to /s, z/)
 - These *could** be transcribed /ʃ^w, ʒ^w, tʃ^w, dʒ^w /
- *But we won’t bother in ‘moderately narrow transcription’
??? What would we do with ‘Schreck’, ‘Schwepps’ vs.
‘she’

Special releases (plosions)

- Stops before nasals often result in a ‘nasal release’ or ‘nasal plosion’
 - Rogers p 57
- Similarly, ‘d’ before ‘l’ may lead to ‘lateral release’ or lateral plosion
 - ‘sadly’
- Unreleased (inaudible release) stops often occur in stop clusters
 - ‘apt’, ‘act’
 - Many languages do not allow inaudible releases of stops
 - Require aspiration or voiced release
 - Compare: [ʼakʰtʰ] [ʼak^ht^h] [ʼak^ət^h]
- What about ‘butler’???
[bʌʔtləɹ] emphatic [bʌt^h]əɹ]

Summary of important allophones and most likely environments

N= may be tested in 'live' narrow transcription

G = 'general knowledge' may be tested in multiple choice, short answer or other focused questions.

CONSONANTS

Aspiration of voiceless stops (N, G)

Aspiration of voiceless stops (transcribed with raised h). Voiceless stops are:

- 1) Always aspirated: word initially OR at beginning a syllable with a stressed vowel.
- 2) Optionally aspirated word finally before a pause.
- 3) NEVER aspirated before a vowel or sonorant following /s/ in same syllable.
- 4) Usually NOT aspirated it occurs in other environments it is usually unaspirated or weakly aspirated.
- 5) Optionally aspirated elsewhere (but not often, except for emphasis).

Flapping (N,G)

Alveolar stops /t/ and /d/ are realized as flaps (taps)

- 6) Usually: when both after a primary stressed vowel and before a reduced syllable.
- 7) Optionally: when both after a primary stressed vowel and a non-primary stressed vowel.

Inaudible release of stops (G, N with directed attention)

Stops show inaudible release or 'are unreleased' (e.g. [p̚, t̚, d̚, g̚] , etc).

- 8) Usually unreleased: when preceding another stop.
- 9) Optionally unreleased: word finally before pause.

Special release (G)

10) Always /d/ before /n/ or syllabic /n/ shows nasal release [dⁿ],

11) Always /d/ before /l/ (and possibly syllabic /l/ shows lateral release [d^l]

Note: Some dialects may also allow /t/ to show lateral release. In which case the release might be devoiced (combining aspiration with the lateral release). Usually and /t l/ combinations lead to 'simultaneously glottalized' /t/ or and character of release is masked by the glottal stop. Compare 'butler', casual [ˈbʌɫ̥t̚l̥ər], emphatic [ˈbʌt̚^ll̥ər]. The first pronunciation is somewhat analogous to what happens to /t/ before /ŋ/ in 'button'.

Devoicing of sonorant consonants (G)

12) In environments where voiceless stops are aspirated, a sonorant consonant following the aspirated stop will show partial devoicing. (The aspiration of the stop is realized in the sonorant consonant).

Clear and dark 'l' (N,G)

13) Always: /l/ is realized 'dark' [ɫ] syllable-finally (including syllabic l).

Syllabic consonants 'l' and 'n' (G, N)

14) Usually: /ən/ is realized as a syllabic 'n' following /t/ or /d/ ('sudden, button, mountain')

15) Optionally: /ən / and /əl / are realized as syllabic [n̩] and [ɫ̩]. /ər / may similarly be represented by a syllabic 'r' [ɹ̩] also written as [ø̩]

Devoicing of voiced obstruents (G)

16) English voiced obstruents are usually fully voiced when they occur between voiced sounds. Otherwise they are often partly devoiced. Other secondary characteristics of voiced sounds (such as their shorter duration and their effects on preceding vowels) may remain.

VOWELS

Nasalization of vowels (N,G)

17) Vowels are nasalized when they precede nasal consonants in the same syllable.

(Vowels may be slightly nasalized following nasals, but this is relatively negligible).

Vowel length (G)

Except for /æ/ which is as long as any other vowel (including /ɑ/ or /ɒ/) in the same circumstances, lax vowels are shorter than tense of the same general height class (i.e. /ɪ/ is shorter than /i/, /ʊ/ is shorter than /u/, /ʌ/ is shorter than /ɑ/ or /ɒ/). All other things being equal, vowels before voiceless obstruents are shorter than vowels elsewhere (i.e. before voiced sounds or in final position).

The following table indicates how such relative durations could be transcribed.

It is not necessary to do so ordinarily in ‘live transcription’. However, you should understand the pattern and be able to transcribe words like the following indicating three rough degrees of length as follows.

Short	Half long	Half long	Long	Long
‘bit’ [ˈbɪt]	‘bid’ [ˈbɪɹd]	‘beat’ [ˈbɪɹt]	‘bead’ [ˈbi:d]	‘be’ [ˈbi:]
‘foot’ [ˈfʊt]	‘hood’ [ˈhʊɹd]	‘hoot’ [ˈhʊɹt]	‘food’ [ˈfu:d]	‘who’ [ˈhu:]
‘but’ [ˈbʌt]	‘bud’ [ˈbʌɹd]	‘bought’ [ˈbɔɹt]	‘baud’ [ˈbɔ:d]	‘bah!’ [ˈbɔ:]

Lax vowels before voiceless obstruents receive no mark.

Lax vowels before voiced consonants and tense vowels before voiceless obstruents receive a half-long diacritic [ˑ]. Tense vowels elsewhere receive a long diacritic [ː].

Vowels before dark /l/ (G)

Vowels before dark /l/ are often somewhat different, usually ‘retracted’ before [ɫ].

Retracted means articulated with less advancement (or more backing) than usual. This is indicated by a ‘minus’ sign under the vowel. So ‘coal’ might be transcribed in extra narrow transcription as [k^hɔ̟ɫ]. In my own speech, there is not much diphthongization of this vowel before /l/, so I dropped the [w] that would normally be there.

Vowels before /ɹ/ (G)

Most dialects of North American English show an extreme reduction of the number of possible vowel sounds in syllables ending with /ɹ/. In particular, vowels that occur in tense lax pairs of the same general height and advancement class often show only one vowel. These are the pairs [i ɪ], [eɪ, ɛ] and [u, ʊ]. We will follow the text and use the lax vowel symbol in broad transcription (no penalty for using the other, however). The vowel quality is usually intermediate between the tense and lax version. But frankly, I think they may be closer to the quality of the tense member in local speech. This can be indicated by a ‘raised’ [ᵛ] or ‘lowered’ [ᵝ] diacritic on the lax and tense vowels respectively in an extra narrow transcription. Some examples are shown below.

Some vowels before /@/. Extra narrow transcription (xNarrow)

Spelling	Broad	XNarrow (raised lax)	XNarrow (lowered tense)
'beer'	/ ^l bɪɹ/	[bɪɹ]	[bɪ̠ɹ]
'bear'	/ ^l bɛɹ/	[bɛɹ]	[bɛ̠ɹ]
'poor'	/ ^l pʊɹ/	[pʊɹ]	[pʊ̠ɹ]

Examples of allophones

Examples : (Length of vowels is not noted)

1) The word 'potato' /pə^ht^heɪtəw / can be pronounced in a number of ways. Here are a few. a) [p^hə^ht^heɪtəw] b) [p^hə^ht^heɪ^həw] c) [p^hə^ht^heɪrəw]

Rules 1 applies to /p/ and /t/ in all cases. Optional rules 4, 5 or 7 might apply to the second /t/ for cases a, c and d respectively. Note for the alternate pronunciation with a reduced final vowel /pə^ht^heɪtə / the second /t/ would almost certainly be flapped [p^hət^heɪrə] by rule 6.

2). 'Battle' /^lbætəl/ would probably show up as a) [^lb̥æɹət̚] or b) [^lb̥æɹ̥t̚]. Rule 15 applies to /b/ and rule 6 applies to /t/ and the final /l/ is dark by rule 11 in both forms. If the final l is realized as a syllabic /l/, then there also maybe a lateral release of the flap in form b).

3). 'blackboard' /^lb_læk_lbɔɹd/ is most likely pronounced [^lb̥læk̚_lb̥ɔɹd̚]. The /k/ is unreleased by rule 8. And the two /b/s and the /d/ are partly devoiced by rule 14. We'll do more in class and I'll try to post a few more interesting examples.

3). 'punter' /^lpʌntər/ is most likely pronounced a) [^lp^hʌntər] or b) [^lp^hʌnt^hər].

The /p/ is aspirated by rule 1. The first vowel is nasalized by rule 15. The /t/ is either a simple unaspirated [t] by rule 4, but may be aspirated in rule 5. Note the /t/ is not flapped. Rule 6 requires that the /t/ or /d/ be immediately after the stressed vowel. Here /n/ intervenes.

Questions for discussion:

- 1) What do you call the little shelf on top of a fireplace? How do you pronounce it.
- 2) How many different ways can you think of pronouncing the word 'hunting'?