

# Vowels, vowels, vowels (and glides)

Rogers Chapter 9

Oct-26-06

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## Master vowel chart LEARN THIS ONE

	Front Unr	Front R	Cent Unr	Cent R	Back Unr	Back R
higher high	i	y	ɨ	ɤ	ɯ	u
lower high	ɪ					ʊ
higher mid	e	ø	ɜ		ɤ	o
lower mid	ɛ	œ	ʌ			ɔ
higher low						ɒ
lower low	æ				ɑ	
'super' low			a			

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## The next chart is the one you should know for the final

- A few differences from official IPA
- More consistent with our English vowel charts
  - Similar with Rogers' charts for English in chapter p 32-34
  - Easier to learn

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Official IPA chart  
: Graphic removed Rogers p 336 Vowel diagram

Higher high

Higher mid

Lower mid

Lower low

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Differences: IPA puts these at the pointy end of arrow

(Rogers changes his mind on some Vs for English vs IPA)

	Front Unr	Front R	Cent Unr	Cent R	Back Unr	Back R
higher high	i	y	ɨ	ɯ	ɯ	u
lower high	ɪ					ʊ
higher mid	e	ø	ɜ		ɤ	o
lower mid	ɛ	œ	ʌ			ɔ
higher low						ɒ
lower low	æ				ɑ	
'super' low			ɑ			

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## No new properties: Just new combinations

- Height, advancement and rounding
- New combinations
  - Front rounded vowels
  - Back unrounded vowels at mid and high heights
  - Some new central vowels

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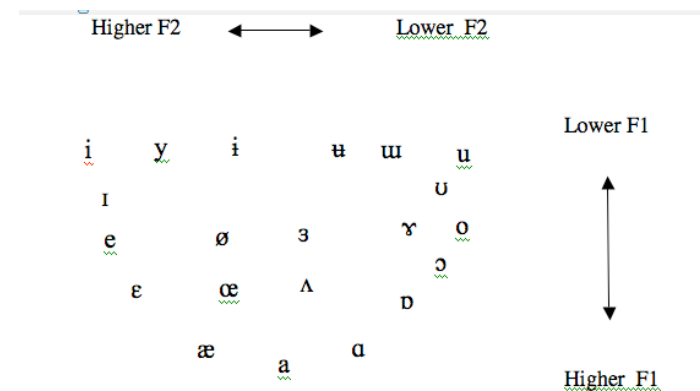
## Variation in text (and notes)

- Rogers puts the English values closer to the previous charts
- I have revised one vowel from previous handout.
  - I think [ʌ] should be used for lower mid central vowel, not higher low central vowel.
    - Please check my consistency in marking quizzes

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Relation of vowel chart to relative formant frequencies

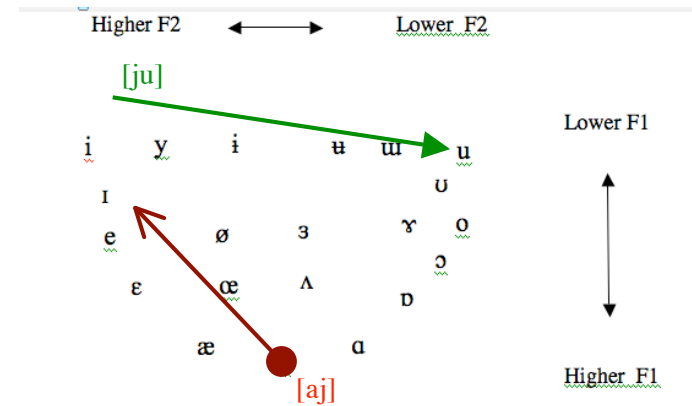


See <http://fon.utu.fi>

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- Graphic removed see:
  - <http://www.umanitoba.ca/faculties/arts/linguistics/russell/138/sec4/form2.htm>

Diphthongs [aj, ju]



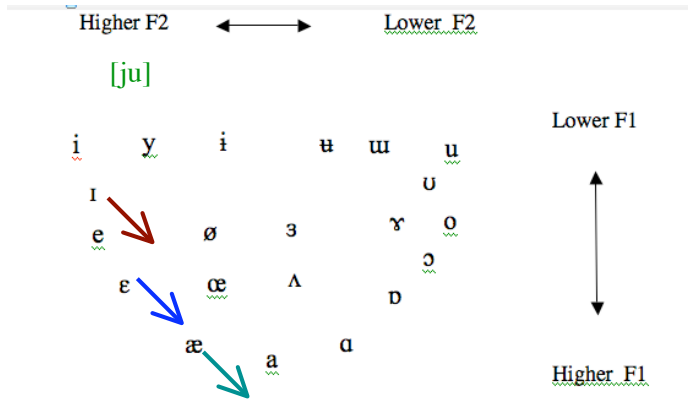
## Of course, there are diphthongs

- ‘Falling’ diphthongs (glidy-bit after the vowel)
  - Movements of vowels from onset target toward another part of the the space
    - [aj] from [a] toward [i] (or [j]);
- ‘Rising’ diphthongs (glidy-bit before the vowel)
  - Movements from some part of vowel space toward a target.
    - [ju] from [j] to [u]. (These not always considered diphthongs)
- Rising/ falling has to do with increase or decrease in ‘sonority’ (more open vowels presumably more sonorous)

## Lax vowel in English often show ‘rising’ diphthong patterns

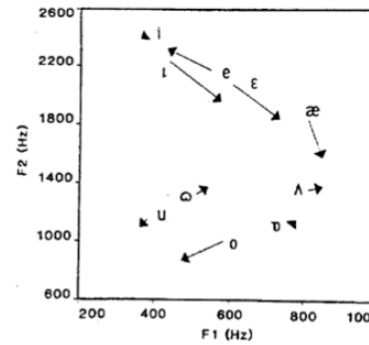
- The vowels [ɪ ɛ æ] in several North American English dialects show movement toward [a [ɪ ɛ æ] at the end
  - How transcribe? [ɪ<sup>a</sup> ɛ<sup>a</sup> æ<sup>a</sup>]
  - Not recognized as ‘diphthongs’ in traditional phonetics
- New term coined to cover it: ‘VISC’
  - Vowel-inherent spectral change
- All diphthongs show VISC, but some other vowels may too.

'VISC' [ɪ ɛ æ]

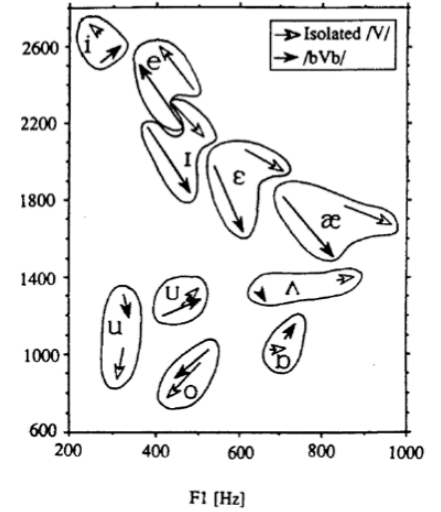


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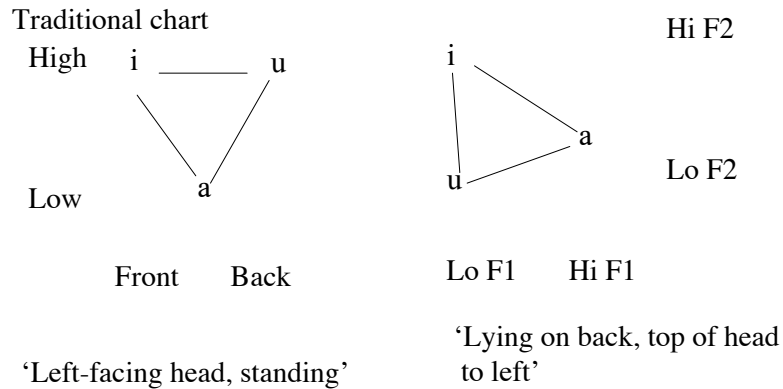


Nearey, T. M., and Assmann, P. F. (1986). "Modeling the role of vowel inherent spectral change in vowel identification," J. Acoust. Soc. Am. 80, 1297-1308.



Andruski & Nearey (1991) On the sufficiency of compound target specification of isolated vowels and vowels in /bVb/ syllables. Journal of the Acoustical Society of America, 91, 390-410, p394

F1 x F2 versus traditional chart



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