

- Questions about homework?
 - (note the blank page on older version)
 - In part 4, use phonetic symbols
- Experimental subject pool.
- Section materials on Coursework.



Today:

- A little more about articulatory phonetics and transcription
- Introduction to Acoustic Phonetics
 - Sound waves and resonance
 - Spectrograms as representations of sound

[tʌjnɪbɪpʰmɔɹɑɪtɪkjələtɔɹɪfənɛrɪks]

- How close a transcription?
 - e.g. aspirated, unreleased stops
 - [ɹ] vs [ʁ]; [ow] vs [oʊ] – your choice
 - But [ɑʊ] for about? [p^hʌli:z].
- Knowing how to characterize phones
 - voicing – place – manner

[zɛrɔsɪrʊms]

- A better site showing vocal folds in action:

https://mustelid.physiol.ox.ac.uk/drupal/?q=vocal_folds

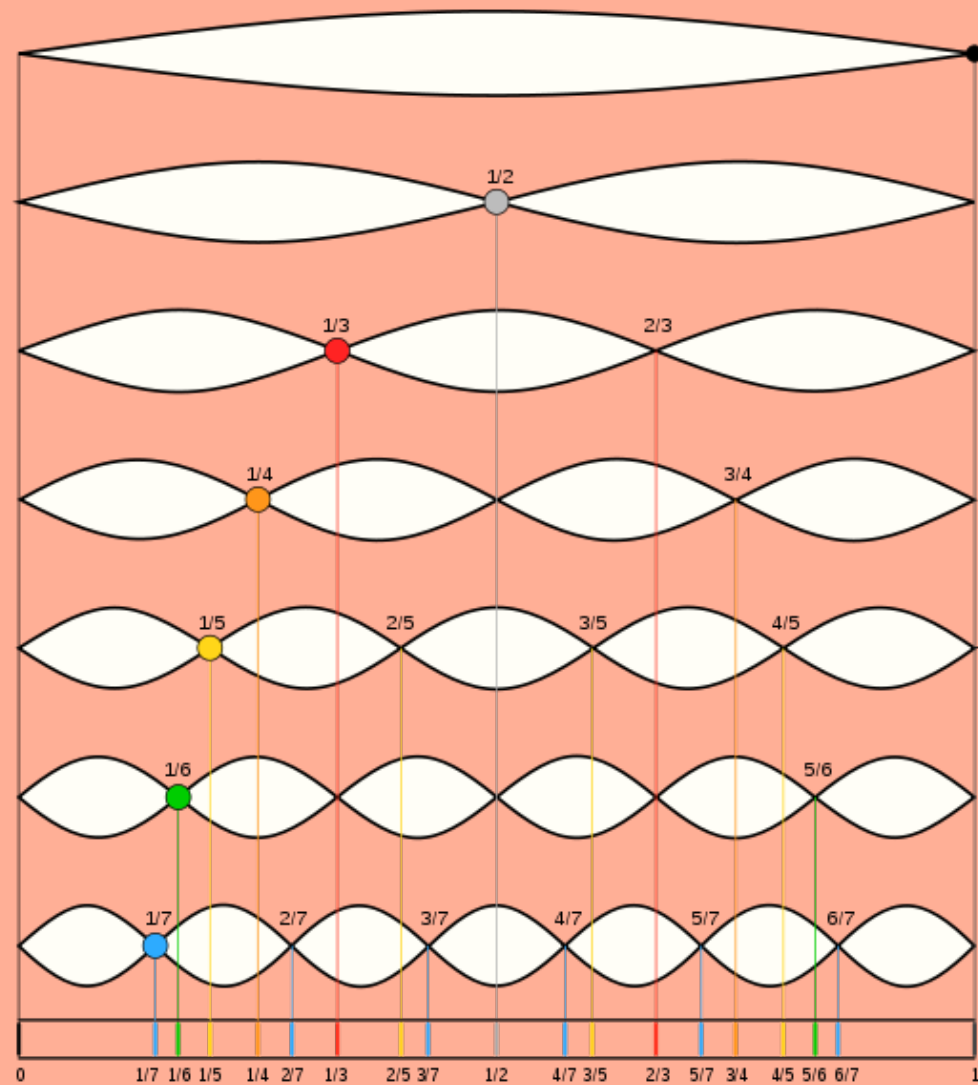
- A movie showing how to break a glass with sound:

http://www.physics.ucla.edu/demoweb/demomanual/acoustics/effects_of_sound/breaking_glass_with_sound.html

- A site for learning acoustic phonetics and praat:

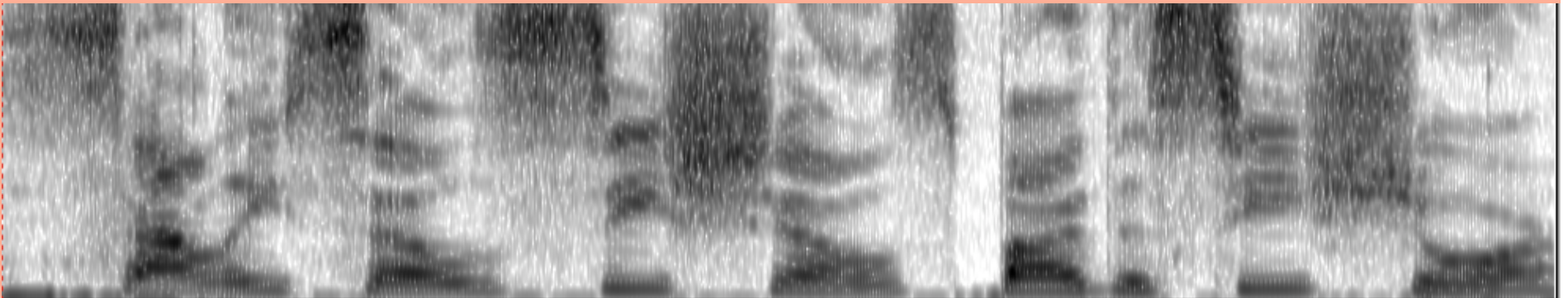
<http://person2.sol.lu.se/SidneyWood/praat/frames.html>

Resonance: F0 and harmonics



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

Sally sells sea shells...

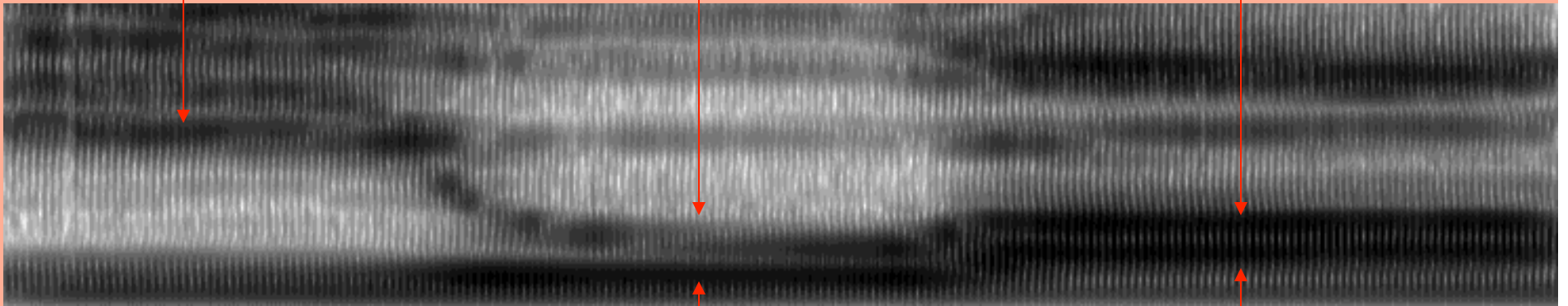


s ae ll y s e ll s s ea sh e ll s b y th e s ea sh o re

2725 hz

852 hz

1226 hz



304 hz

400 hz

780 hz

i

u

a

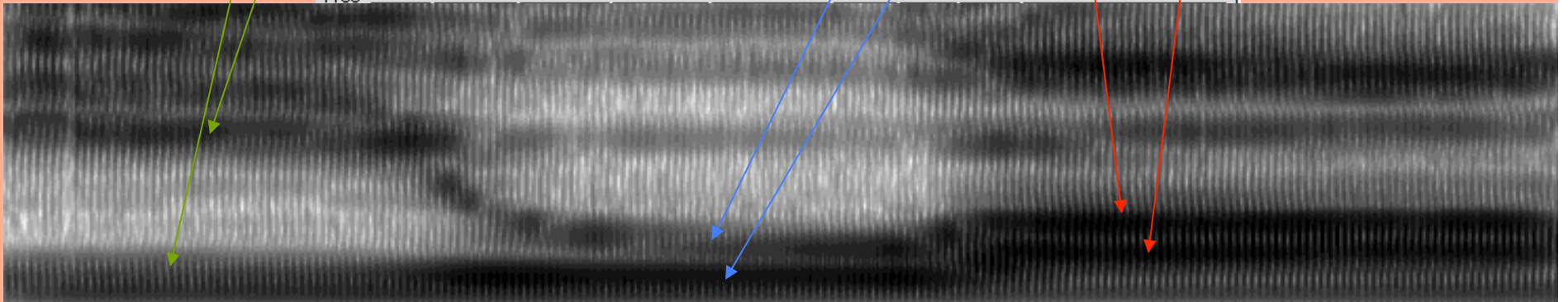
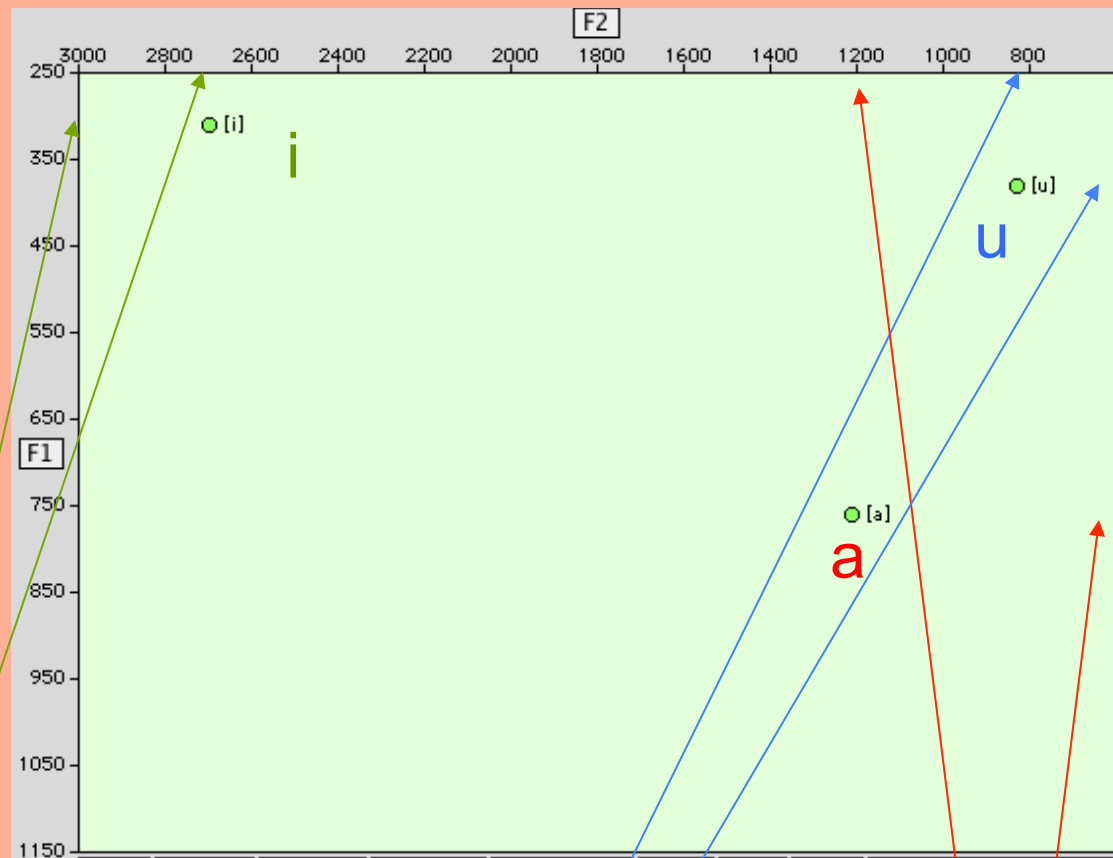
Vowels and resonance



Formants and vowel quality

- The first formant corresponds to vowel height, i.e. open-ness (higher values = lower jaw/tongue positions)
- The second formant corresponds to frontness-backness (higher values=greater tongue fronting)

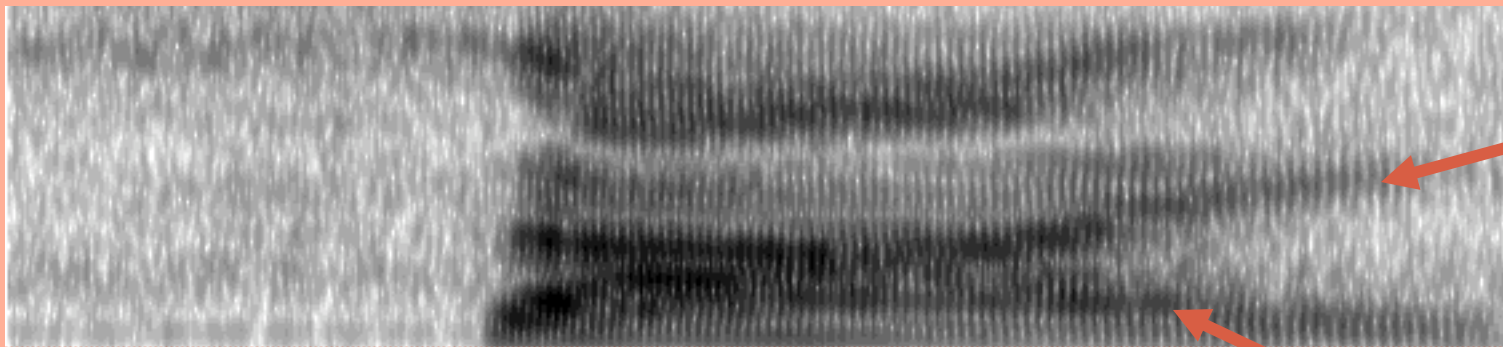
f1-f2 Plot of iua



Language comes out in a continuous stream, which we learn to hear as a succession of discrete segments.

Spectrogram of *sigh*

Note the curving formants that distinguish the diphthong [aj].

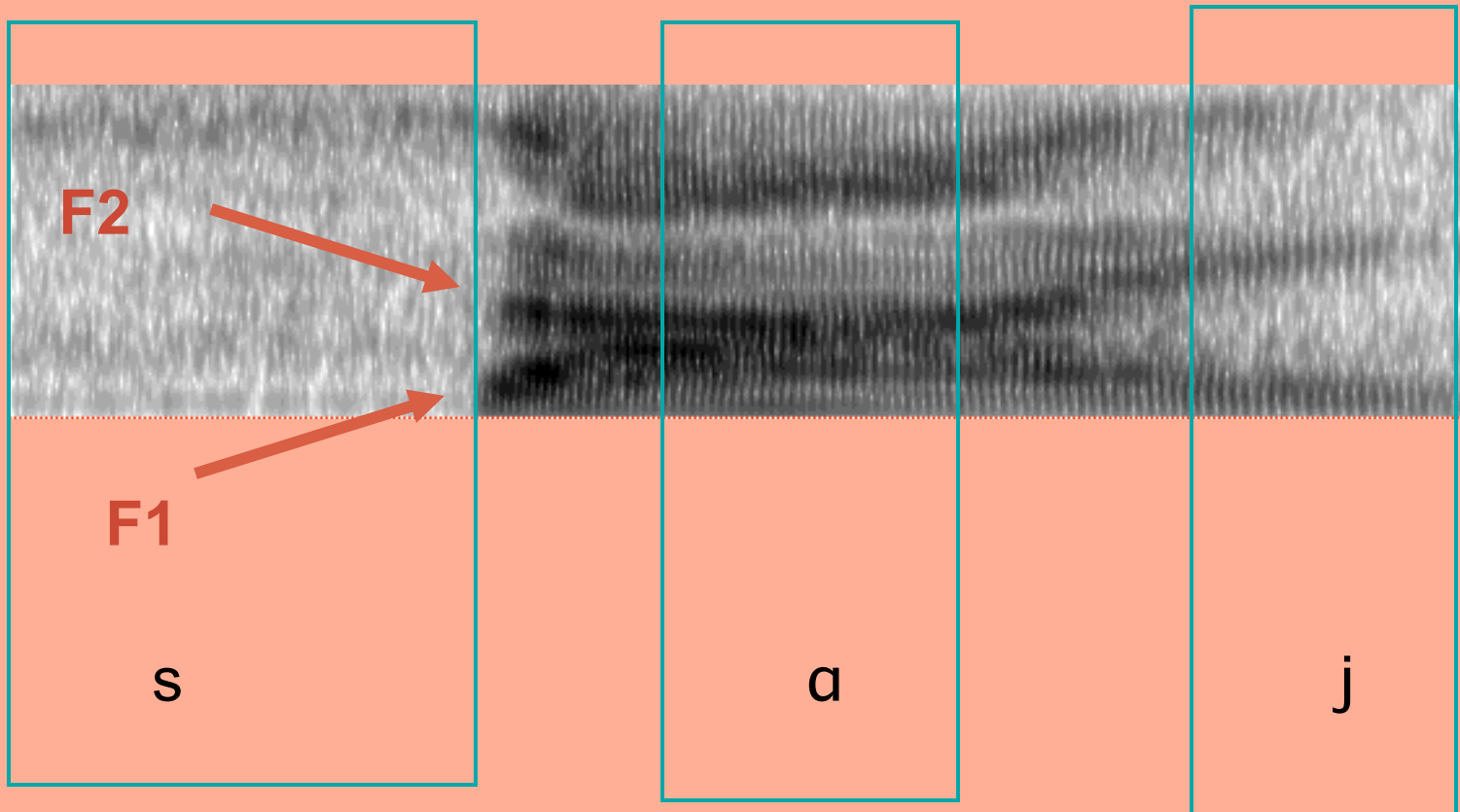


s

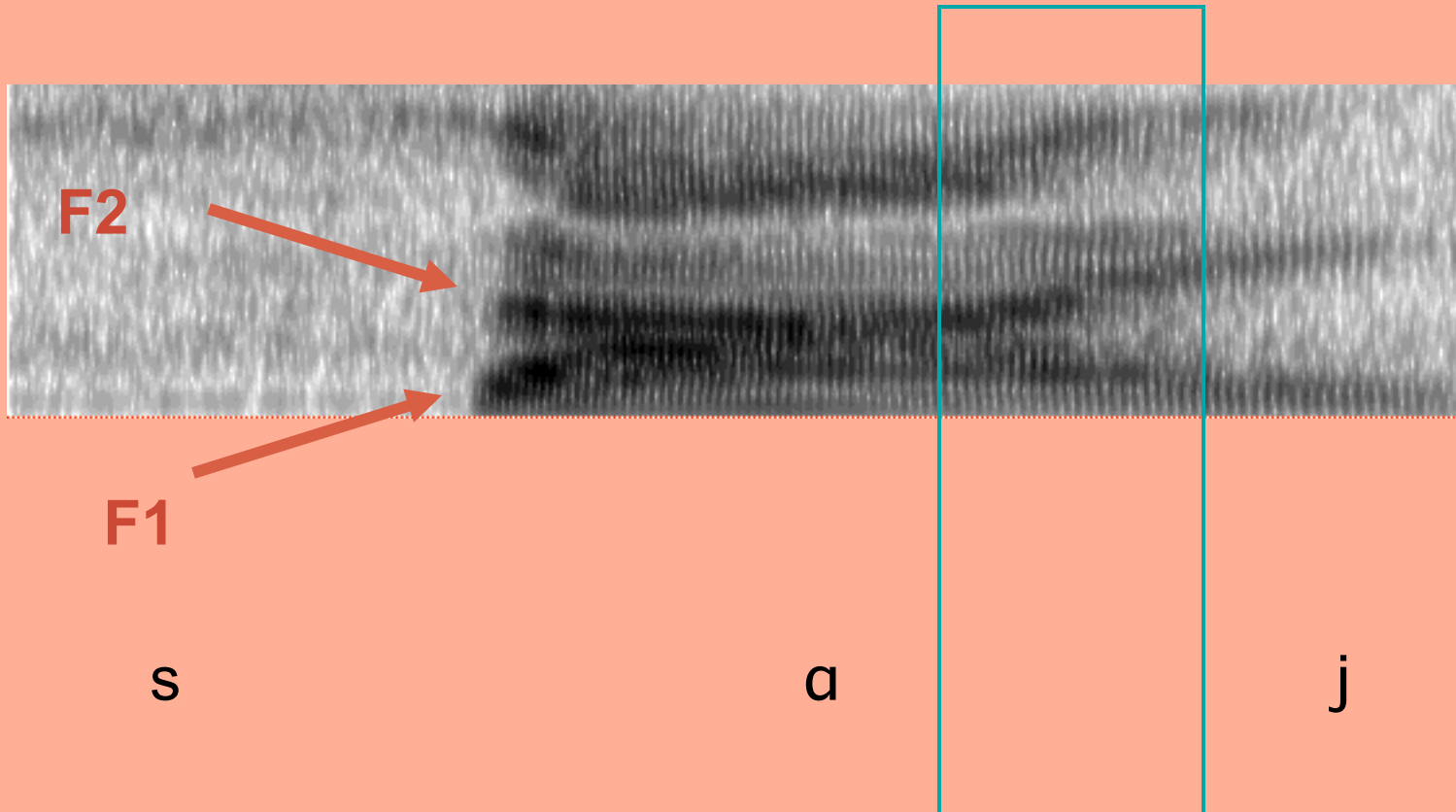
a

j

We can clearly see the [s], the [a] and the [j]

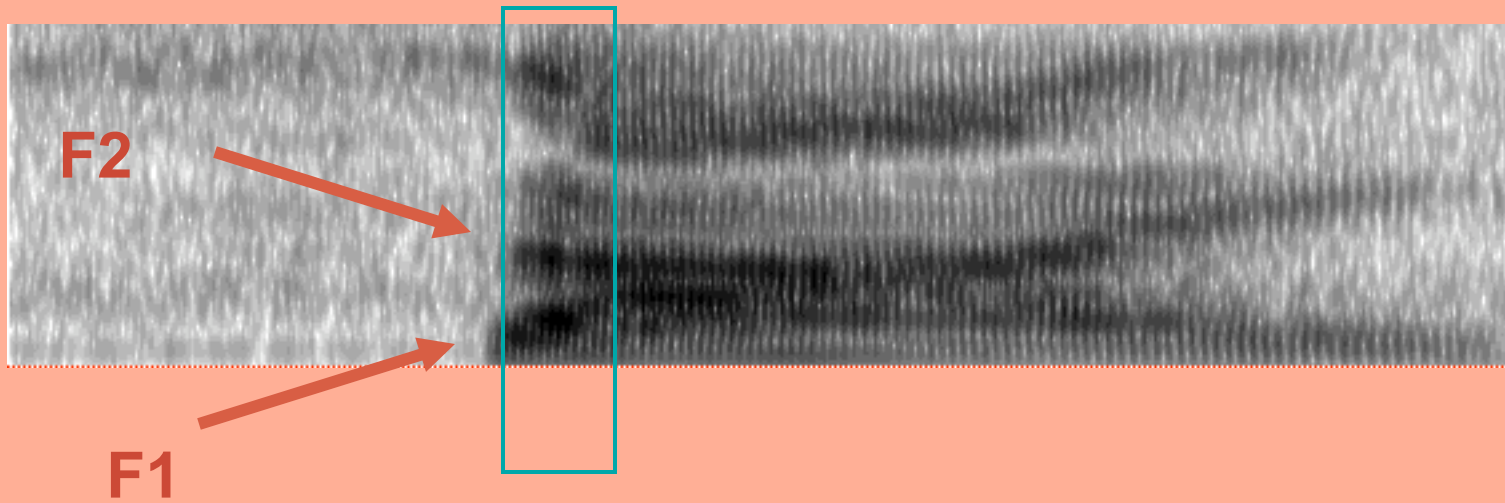


And we can see the transition from [a] to [j]



but ..

what's this?



s

a

j

Take a look at this in Praat

Phonetic processes

Language comes out in a continuous stream, which we learn to hear as a succession of discrete segments.

In the case of *sigh*, there is information about the consonant in the following vowel.

In this way, segments overlap in the stream of speech, yet we learn to hear them as purely sequential.

These coarticulations can become exaggerated, and can lead to change. We will begin our study of phonology next week, by examining some processes by which sounds are affected by their phonetic environment.