

Source-Filter
Model

Vowel analysis

exploratory analysis

extract data

plotting

R packages

vowels

phonTools

Vowels

G. Moroz

27 May, 2017

Source-Filter Model of Speech Production

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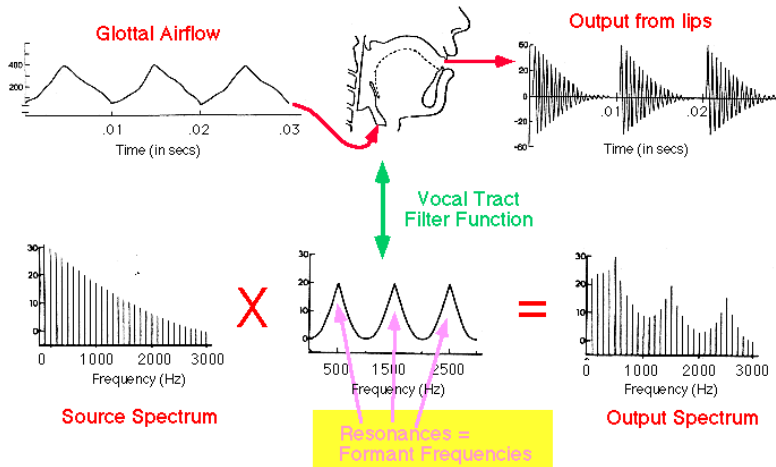
plotting

R packages

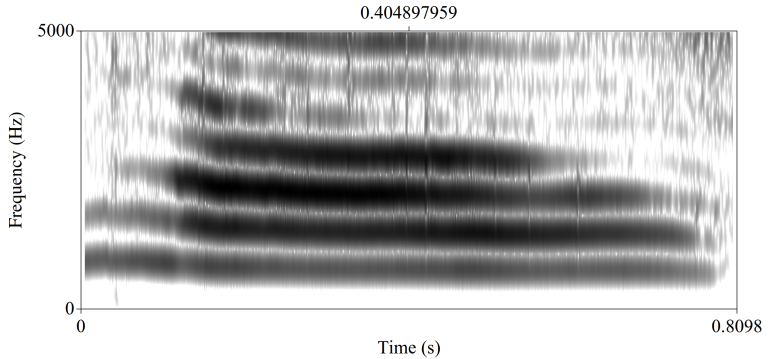
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The output energy (at the mouth) for a given frequency is equal to the amplitude the source harmonic, multiplied by the magnitude of the filter function for that the frequency.



???



Cat meow

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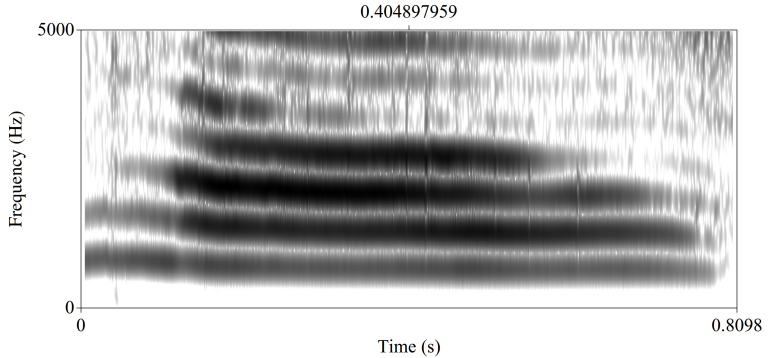
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Vowel chart

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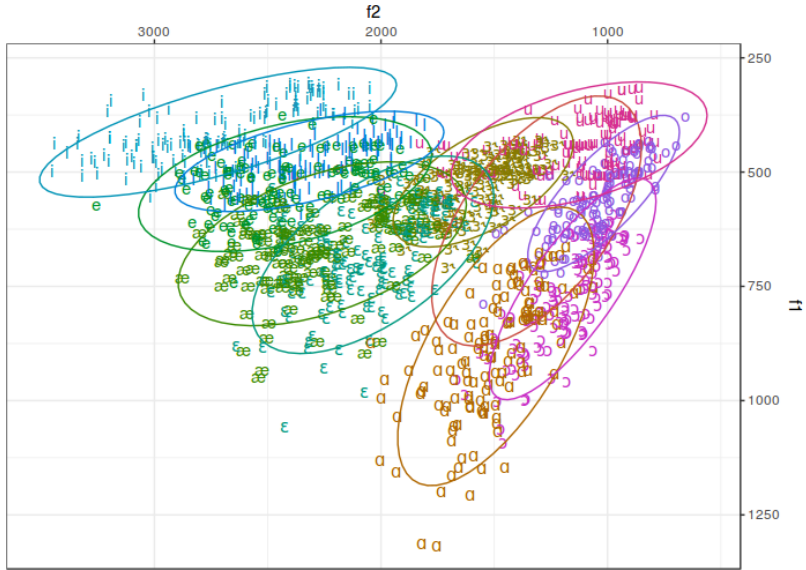
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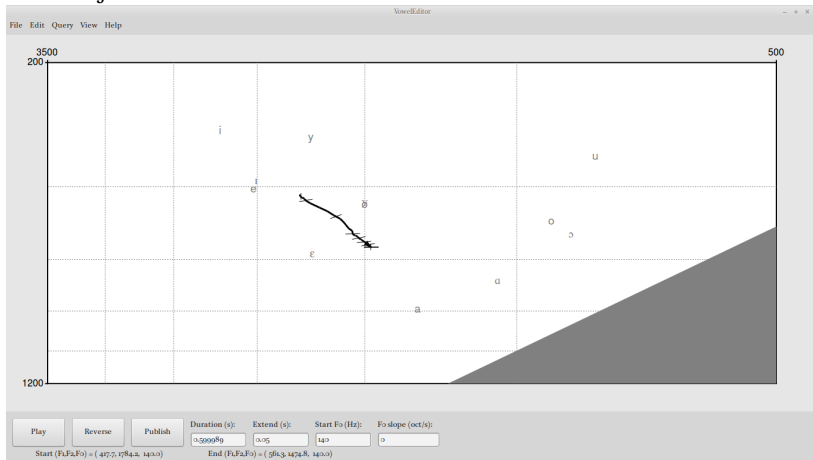


data from Hillenbrand et al. (1995)

презентация доступна: <https://goo.gl/W8iZiA>

Vowel editor

Praat objects > New > Sound > Create sound from VowelEditor...



How to analyse vowels?

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- record sounds
- annotate sounds
- make an exploratory analysis
- extract duration and formant information from your data
- create the plot

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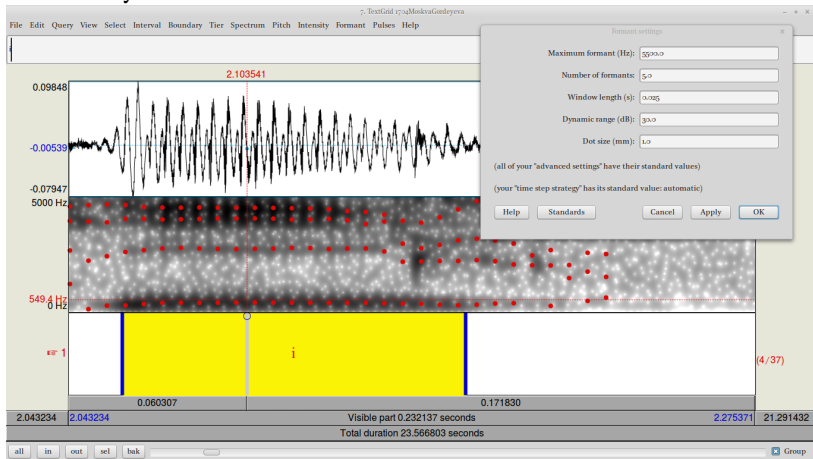
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Formants in Praat

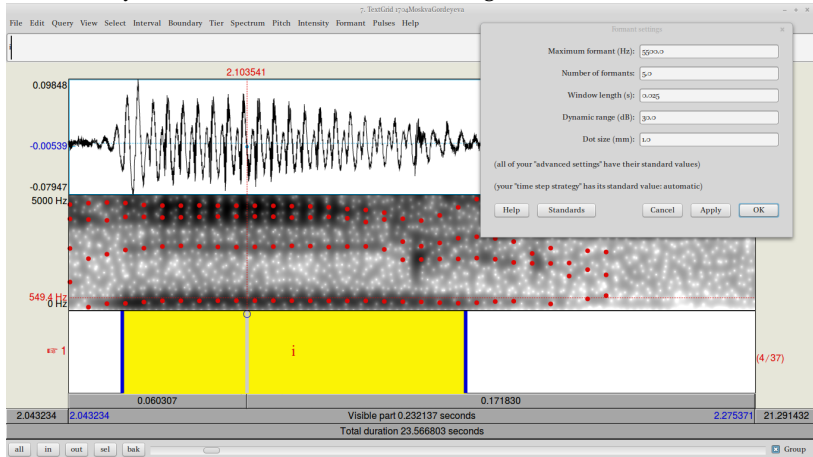
Praat Analyser > Formant > Show Formants



- F1 select the nearest first formant value or mean value for selection
- F2 select the nearest second formant value or mean value for selection
- F3 select the nearest third formant value or mean value for selection

Formants in Praat

Praat Analyser > Formant > Formant Settings...



During analysis you should set Maximum Formant value so as to distinguish [i], [a] and [u].

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Praat scripting

Praat have its own scripting language. You can read about it:

Praat Objects > Help > Scripting tutorial

There are a lot of Praat scripts [here](#).

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Praat scripting: extracting duration

- Open Praat Objects
- Open some TextGrid
- Praat Objects > Praat > New Praat script
- Copy script from [here](#) to the new window

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- **Version:** 1.2-1
- **Date:** 2014-11-14
- **Author:** Tyler Kendall and Erik R. Thomas, [?]

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- Version: 0.2-2.1
- Date: 2015-07-30
- Author: Santiago Barreda, [?]

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Thank you!

Please, don't hesitate to write me

agricolamz@gmail.com

Reference

- Barreda, S. (2015). phonTools: Functions for phonetics in R. R package version 0.2-2.1.
- Kendall, T. and E. R. Thomas (2014). vowels: Vowel Manipulation, Normalization, and Plotting. R package version 1.2-1.

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