GET TO KNOW PRAAT

recordings

1) Start Praat
2) New → Record mono sound… → choose a sampling frequency of 16000 Hz → Record
3) Make sure that the level indicator stays green or hits yellow only temporarily, but does not become red
4) Click Stop at the end and insert a name: and click Save to list & Close. The recording is now available in the Objects window of Praat but is not yet saved on the disc of your computer
5) Select the sound file in the Objects window and use use Save → Save to WAV file... → (File browser) to store it on your computer

Read a WAV-File from the disc

1) Open → Read from file… → (File Browser)

Display a waveform

1) Select in the Objects: list the Sound and click View & Edit.
2) Usually the Spectrum is selected and Pitch, Intensity, Formant, and Pulse are not

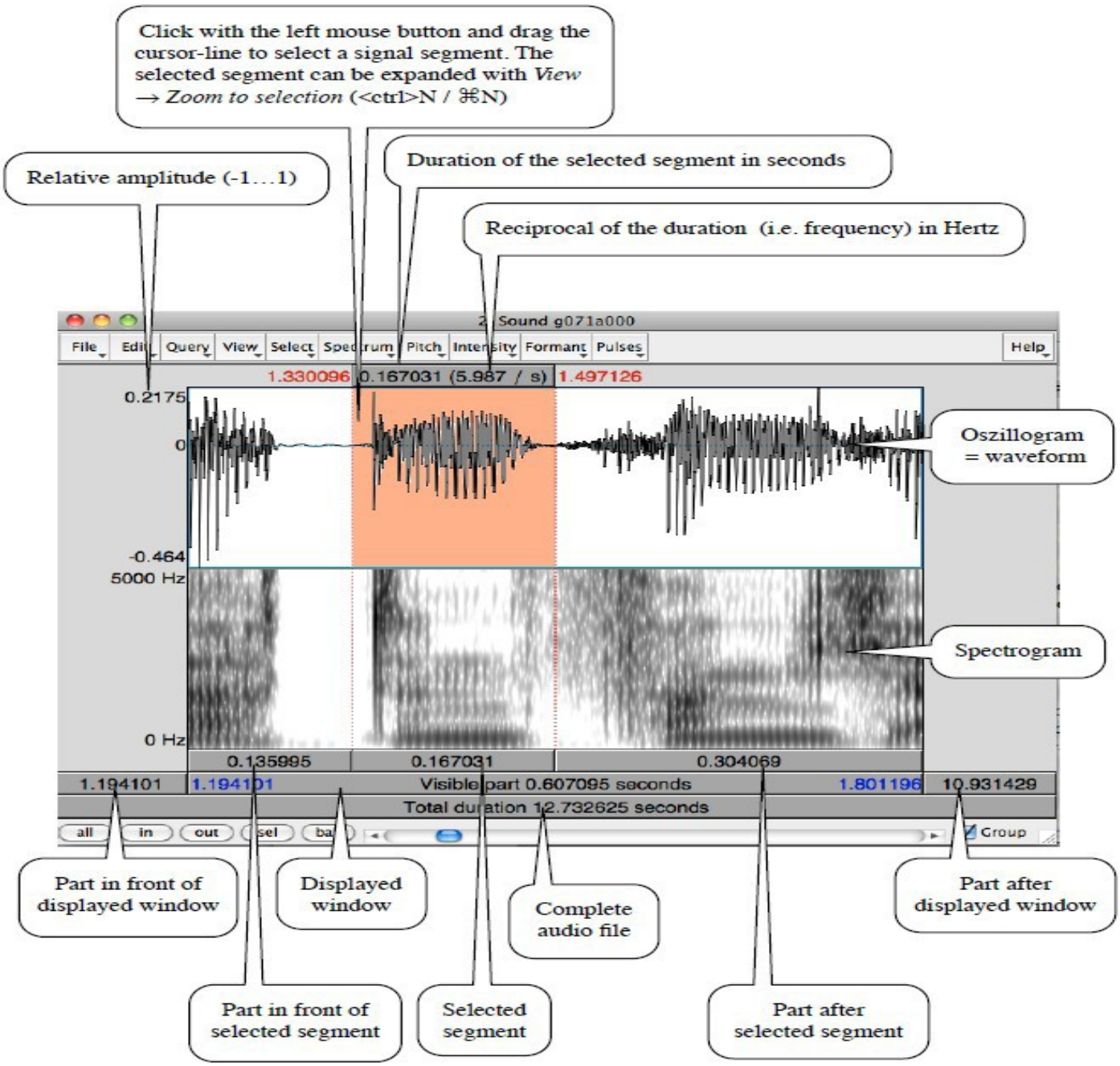
Add a TextGrid for labeling

1) Select your sound file in the Objects window
2) Annotate → To TextGrid...
3) All tier names: delete “Mary John Bell” by any other name – notice that three names would create a TextGrid with 3 tiers
4) Delete “bell” from 'Which of these are point tiers?'
5) Click OK
6) Select both Sound and TextGrid in the Objects window
7) Click View & Edit
8) Select the beginning of the sound/segment in the oscilogram or spectrogram
9) Click in the circle of the gray vertical line in the TextGrid or just hit Enter
10) Type in the name of the segment
11) Select the end of the sound/segment and create the boundary (click in the circle or hit Enter)

Delete a boundary

1) Select the boundary
2) Boundary → Remover or use 'Alt'+'Delete'

Do not forget to save your TextGrid!!



(Reetz, see 'Lehre', Praat in a Nutshell)

<u>Within the View & Edit window</u>

1) You can switch on some more properties of the speech signal
    a) pitch: representation of the intonation movement of a speaker (blue line)
        - Only available for voiced sounds
        - change the default settings
        - pitch listing – Hz for a certain point in time, selection: Hz values for certain points in time)
        - get Pitch - same but without the exact time information (mean pitch for a selection)

- Get minimum/maximum – only for a sound selection – what is the minimal or maximal value
- Draw visible pitch contour - image of the pitch contour in Praat Picture window
- extract visible pitch contour – available in Objects window - pitch file where you can see and change the pitch and hear it in isolation
  - digitis between 0 and 9 represents pitch candidates
  - digits represent the goodness of the candidates (9 best, 0 worst)
  - path of red/pink disks represent the best path
  - blue rectangle → voiceless sound, white rectangle → voiced sound
  - line of digits along the top → relative intensity
- if you want to manipulate pitch within the sound file, choose the Sound file in the Objects window and use 'Manipulation'
- there you can manipulate the pitch points and listen to the altered voice

b) intensity: volume, loudness (yellow line)

- change the default settings
- intensity listing - dB for a certain point in time, selection: dB values for certain points in time)
- get intensity - dB for a certain point in time)
- get minimum/maximum – only for a sound selection – what is the minimal or maximal value
- draw visible intensity contour (Praat Picture window)
- extract visible intensity contour - some more possibilities, mean, standard deviation,... see buttons on the right side of the Praat main window)

SIGNAL TO NOISE RATIO

- to determine how 'good' your recording is depending on background noises
- good: >50dB , acceptable: > 30 dB
  - look for the lowest and highest intensity in the signal and calculate the difference

c) Formant: resonance frequencies of the vocal tract (red points)

- change default settings
- formant listing (F1-Fn for a certain point in time)
- Get first/second/third/fourth formant – for a certain point in time
- Get formant – you have type in a formant number, value for a certain point in time
- draw visible formant contour – in Praat Picture window
- extract visible formant contour – some more possibilities, mean, standard deviation, number of formants,... see buttons on the right side of the Praat main window)

d) pulses: glottis pulses or vibration of the vocal folds (blue vertical lines)

- change default settings
- voice report (for a selection) - information about pitch, pulses, voicing and some other things

- pulse listing – for a selection - points in time where a pulse appears

e) spectrum: settings of the spectrum
   - change the default settings
   - Get frequency at frequency cursor
   - draw visible spectrogram (in Praat Picture window)
   - Extract visible spectrogram – available in Objects window
   - view spectral slice – components of the complex signal at a specific point in time

Alter the loudness of a recording

1) select Sound file in Objects window → Modify → Scale peak... → set value to 0.99
   - the highest peak will be set to 0.99 and the sound will become louder without any changes of the acoustic signal

CHARACTERISTICS OF SPEECH SOUNDS IN THE OSCILOGRAM AND SPECTROGRAM

Sound	Oscilogram	Spectrogram
Sonorants	Periodicity	'voice bar'
Vowels	Periodicity, high amplitude	Formant structure
Nasals	Quasi-periodical signal, relative high amplitude	Higher frequencies strongly dampened, 'anti-formants'
Diphthongs and Glides/Liquids	Gradually changing signal, difficult to separate from each other	Continuous formant movement
R-like sounds	Eventually irregularity, frequently no 'individual' sound	
Voiceless fricatives and aspiration	Relatively black, irregular structure	Energy in the high frequencies
Voiced fricatives	Periodicity with irregular structure	Voice bar and (slightly less) energy in the high frequencies
Voiceless stops	Pause in signal and following burst Typically longer closure duration and VOT, stronger burst	No energy at the beginning, energy within all frequencies for the burst
Voiced stops	Pause in signal and following burst Shorter closure duration and VOT, weaker burst	Very low energy at the beginning (voice bar), energy within all frequencies for the burst

Extended summary of Reetz, Henning: Praat in a Nutshell. (http://menzerath.phonetik.uni-frankfurt.de/teaching/Documentation/Praat_in_a_nutshell.pdf) [18.11.2012]