Using Praat for research in Speech Sciences: Programming fundamentals, methods and good practices for production and perception studies

6th, 7th and 8th of July, 2016

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Session 1 (09:00 – 13:00, Wed.): Praat scripting 101

- Preliminaries: checking installed software; how and where to edit code.
- Writing a script: overview, “hello world”, variables (string and numerical), conditional jumps, loops (for, while, repeat), functions and pseudo-arrays.
- Scripting challenges: small scripting challenges to practice typical programming challenges, with increasing difficulty.

Session 2 (14:00 – 18:00, Wed.): Bursting the script bubble properly

- Outside the script bubble: navigating, creating and querying Praat objects; forms, working folders and paths, selecting and creating files and directories, writing procedures, and using other Praat scripts within scripts.
- Quality control: good scripting practices; testing and debugging (printing, pausing and exiting); good practices for long term and big projects (modularity).
- Scripting challenges: writing simple scripts and procedures within scripts to manipulate and query Praat objects; predicting the user's behaviour and act accordingly.

Session 3 (09:00 – 13:00, Thurs.): Advanced Praat usage

- Peeping into the matrix: Praat objects' attributes; using attributes in formulas.
- Pimp my Praat: changing Praat's default settings, menus and buttons; extending its functionality with plug-ins.
- Talking in computer: calling system commands from within Praat; starting or executing Praat from the command line.
- Scripting challenges: creation and implementation of a dummy Praat plug-in.

Session 4 (14:00 – 18:00, Thurs.): The production domain

- Textgrids: planning and creating TextGrids.
- Annotating: segmenting and labelling; good practices; some ways to automatize parts of some processes (finding unvoiced, using reliable acoustic landmarks, using forced aligners).
- Extracting data and measuring: reproducibility and efficiency; querying objects (including TextGrids); outputting results to tables and then to standard external files (formatting and encoding).
- Praat picture: the logic behind the canvas, how to script it, some tricks for nicely looking

images and some minimum standards for publication.
- Scripting challenges: small production project (recordings will be provided) to practice segmentation and annotation, data extraction and storage, and preparation of figures.

Session 5 (09:00 – 13:00, Fri.): The perception domain

- Creating stimuli: cross-splicing (zero-crossings and overlap); RMS intensity normalization.
- Creating continua: some pointers and tips; working example for vowel continuum from reference values.
- Running experiments: Experiment MFC, Demo window; Open Sesame.
- Scripting challenges: preparing, programming and extracting results from a perception experiment in Praat.

Session 6 (14:00 – 17:00, Fri.): Miscellanea and personal interests

- Modifying existing scripts to make them work: considering the associated problems (and dangers) and looking at some real examples.
- Your interests: one-to-one conversations with attendees to offer personalized suggestions and scripting challenges. NOTE: by all means do bring any questions, scripts, ideas, recordings, data, corpora, or anything that you'd like me to take a look at, or that you'd like to discuss, or an area in which you need some help.
- Free practising session: practice personalized challenges and/or contents from any of the previous modules.