Phonetic Analysis with Praat

Instructors:
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Course description:
While it is important to pay close attention to consultants' production during fieldwork sessions and to attempt impressionistic transcriptions, computer-based analysis can provide much more in-depth phonetic information, often revealing contrasts that might be missed by the fieldworker due to his/her native language phonology. This course will introduce students to the Praat software and its myriad applications in phonetic analysis and experimentation. We will address relevant facts concerning recording, digitization, and file types, and demonstrate best practices in implementation of the measurement capabilities of the Praat software and the use of Praat to generate, manipulate, and synthesize sounds. Finally, we will give an introduction to Praat scripting and to the creation of simple perception experiments and stand-alone interactive modules.

Course Materials:
Boersma, Paul & Weenink, David (2015). Praat: doing phonetics by computer [Computer program]. Version 5.4.18, retrieved 7 September 2015 from http://www.praat.org/

Download the latest version of Praat software at http://www.fon.hum.uva.nl/praat/. Praat is available for a number of platforms including Macintosh, Windows, and Linux, all available at the given website. The program should be downloaded and installed in preparation for the first day of class.

Supplies Needed:
Students will benefit most from this course if they can bring a laptop computer with the Praat software installed (rather than tablet or phone, which do not support Praat). Please email the instructors ahead of time if you do not have access to a computer and would like to take the course, we should be able to make arrangements to accommodate you.

Course Goals:
By the end of this course students will feel comfortable with the Praat software. They will be able to conduct acoustic analyses both by hand and using Praat scripts. Additionally, they will be able to self-teach more advanced scripting using online forums, colleagues, and the Praat help menu.

Student Learning Objectives:
By the end of the course students will be able to:
1. Navigate the Praat software (software layout, basic settings, types of Objects, opening/closing/saving files, direct recording, viewing Sounds in the Editor, Spectrogram settings, TextGrids, etc.). **Day 1**
2. Take acoustic measurements (duration, pitch, vowel formants, amplitude, spectral slices, voice quality measures, spectral center of gravity, etc.). **Day 2**

3. Manipulate sounds in Praat (cropping/splicing, filtering, pitch and duration manipulation, synthesis/resynthesis) and produce and save pictures/plots in the Praat picture window. **Day 3**
4. Conduct basic scripting in Praat, use the Demo window, and implement simple perception experiments. **Day 4**

Instructional Methods:
This course will rely heavily on examples and in-class practice exercises. After addressing the fundamental issues concerning recording, digitization and file types, the general approach will be to describe and demonstrate an analysis, indicating the effects and appropriate instances of use for relevant settings, and then to allow students to tackle practice exercises in class, giving individual feedback as necessary.

Evaluation:
Each day of the course students will be asked to conduct various activities. (See Course Schedule below.) Each day's activities will be collected by the instructors and evaluated for completion and attention to the relevant techniques taught during the class session. Evidence of a serious attempt to properly complete the assigned tasks will be sufficient for a passing grade.

Disabilities Services:
The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. The instructor will work with the Office of Disabilities Services (208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities.

Course Schedule
*Activities subject to slight modification.

Day	Topic	Activity
1	Introduction to Praat	Students will record themselves saying a short sentence and produce a TextGrid delimiting segments.
2	Acoustic Measurements in Praat	Students will be provided with a sound file. They will be asked to take a variety of acoustic measurements.
3	Manipulating sounds in Praat and producing pictures/plots in the Praat picture window	Students will manipulate some aspect, pitch for example, of their previously recorded sentence (Day 1) and then plot both the original and manipulated versions using the Praat picture window.
4	Introduction to Scripting and perception experiments in Praat	Students will be given a template for a basic perception experiment. They will fill in the settings and stimuli using materials they have previously produced in class. They will then have another student try their experiment.