A SIMPLIFIED SYSTEM FOR ANALYZING STOP CONSONANT ACOUSTICS

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ABSTRACT: There is an ongoing study of stop consonant production in developing speech. This requires the analysis and acquisition of acoustic data. The existing system is very complex, allows too much room for human error and requires a great deal of background knowledge. This system was redesigned to simplify the process and reduce the opportunity for human error. The new system contains one module using Praat software and another using custom software written in MATLAB.

DESIGN OBJECTIVES:
1. Semi-automate labeling of speech events using Praat software
2. Import Praat labeling data into a MATLAB database
3. Perform the statistical analysis of data in MATLAB
4. Maintaining system flexibility so that it can be used for other studies

DESIGN/RESULTS:
1. Label waveforms in Praat
2. Extract meaningful data from file names into MATLAB database
3. Extract speech events (labels, times) into MATLAB; save to database
4. Compute durations, average durations in MATLAB; save to database
5. Output durations into a table showing averages across specified speech labels
6. Provide user interface allowing user to select measurements for analysis
7. Statistical analysis reflecting stop-consonant characteristics

Example of Labeled TextGrid