Intensity_contour_4_0_0.praat
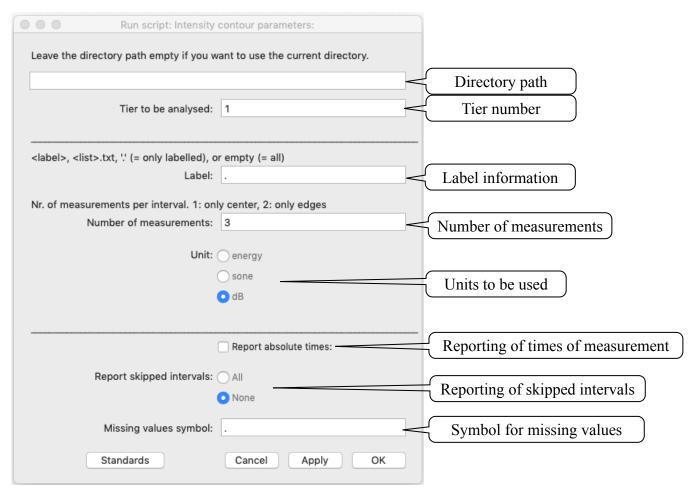
Task:
This script opens all sound files in a directory and associated TextGrids (if they exist), computes intensities of all segments, by stepping through each segment, and writes the results as a percentage of the time of a segment to a text file with the name "intensity_contour_results_<date>_<time>.txt". If no TextGrid exists, the whole file as taken as one segment. The length of the segment, and the mean intensity values of a segment are reported as well.

By choosing only one step per segment, the script will report the intensity values at the center of the segment, choosing two steps will cause the reporting of the values at the edges of a segment.

Parameter:
Please read the **Programming** section for more internal parameters that can easily be changed.

Directory path:

The script handles all sound files in a directory specified in this field. If this field is left empty, the script will handle all sound files in the directory where the script was started (i.e., the script is placed in the same directory as the sound and TextGrid files).

Tier number:

The number of the interval tier to be analysed.

Label information:

The segments (= intervals in PRAAT terminology) that should be analysed can be specified in several ways (in case no TextGrid file is found, this field is ignored):

<label>:

Giving a label (e.g. a:) or a list of labels separated by commas or spaces (e.g. i:,I u:,U) will only report segments that have this label. This function is case sensitive.

<list>.txt:

Giving a text file (e.g. label_list.txt) will report all segments that are listed on a line-by-line basis in a raw text file (not a Word or Pages file). Note that the extension .txt must be given in this field. Example of such a text file:

```
a
a:
ae
o
```

'.':

Using a dot (.) will report values for every labelled segment.

empty:

Leaving this field empty will report values for all labelled and unlabelled segments.

Number of measurements:

Number of measurements per segment. Setting this value to '1' will report only the intensity data from the center of the segment. Setting it to '2' will report the data from the edges of the segment. Note that this value is the number of points to be reported, not the number of intervals within a segment (e.g. setting this value to '10' will report data at 0%, 11%, 22%, … 89%, 100% of a segment).

Reporting times of measurements:

By default, the output is reported in percentages of the length of an interval. Setting this flag will additionally report the absolute time of the measurement in seconds.

Reporting of skipped intervals:

Handling of segments which are excluded by the **Label information**:

All:

All segments excluded from the computations are reported with File, Label, Start(s) and Duration(ms) only (see **Result file** below), all other values are set to the missing value symbol (see below). This function can be helpful to see the context of a particular segment analysed, e.g. the listing will show the data for a vowel, but also the labels of the segments before and after it, which are not vowels.

None:

No segments that are excluded because of any criteria are reported.

Symbol for missing values:

When PRAAT cannot compute a value it uses internally the string "- undefined -". This script replaces this string by the string given in this field. For a subsequent analysis of the data with JMP, the dot indicate missing values, for R it would be NA.

Result file:

The script generates a raw text file with tab-delimited data and a header line. The file name is of the form "intensity_contour_results_<date>_<time>.txt" with <date> of the form 'yymmdd' (i.e. 2-digit year, 2-digit month, 2-digit day) and <time> of the form 'hhmmss' (i.e. 2-digit hour in 24 hour format, 2-digit minutes, 2-digit seconds). For example, a file with the name "formant_contour_results_190322_150110.txt" was created on the 22nd of March 2019 at 3pm, 1 minute and 10 seconds. The parameters controlling the computation are listed at the end of every result file.

The result file for a parameter setting to report 3 measurements per segment with their absolute time and reporting excluded segments:

| Sound file name | Interval start time | Mean intensity of interval | Time of measurement |
| Interval label | Interval duration | Percentage of interval | Intensity measurement |

File	Label	Start(s)	Duration(ms)	Mean(dB)	%	Timepoint(s)	Intensity(dB)
g071a000		0	793.4	.	.	.	.
g071a000	j	0.7934	91.6	77.3	0	0.7934	61.3
g071a000	j	0.7934	91.6	77.3	50	0.8393	79.3
g071a000	j	0.7934	91.6	77.3	100	0.8851	85.6
g071a000	ā	0.8851	77.8	81.4	0	0.8851	85.6
g071a000	ā	0.8851	77.8	81.4	50	0.9240	81.8
g071a000	ā	0.8851	77.8	81.4	100	0.9629	75.6
g071a000		0.9629	0.06	.	.	.	.
g071a000	g	0.9629	50.9	72.3	0	0.9629	75.6
g071a000	g	0.9629	50.9	72.3	50	0.9884	71.3
g071a000	g	0.9629	50.9	72.3	100	1.0139	72.0

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```
Script: intensity_contour_4_0_0.praat
Analysis started:  8-Oct-20 09:31:28
Tier: 4
Labels: .
Step rate: 0 s
Low F0: 50 Hz
Computation units: dB
```

Information for programming:
Some parameters can be set underneath the 'form' section in the script. these are:

Directories: The script uses internally separate strings for sound, TextGrid, result and support directories. Users who use separate directories for these can adjust these names in the script (or put them into PRAATs 'form' window).

Sound file names: The default extension for sound files is ".wav". This parameter can be changed in the script.

Intensity computing parameters:
step_rate = 0
low_F0 = 50

User feedback:
The script reports which file is being handled and the percentage of all files in a directory that have been handled. By setting this switch, any output (other than error and warning messages) will be suppressed. This will decrease processing time, but there is no feedback other than an increasing size of the result file.
user_feedback = 0   Gives user feedback
user_feedback = 1   No user feedback

Noprogress string:
PRAAT itself reports its activity when computing pitch, intensity and formants. All these outputs can take substantial processing time, sometimes longer than the actual computation time. (This string is actually positioned where in PRAAT the   noprogress   is written.)
np_string$ = ""   (= empty string) normal PRAAT feedback
np_string$ = "noprogress"   No PRAAT feedback

Dummy data header line:
Statistic programs like JMP decide the type of data for each column on basis of the first data line. To force correct data-type assignment (due to missing data in the first data row) a dummy data line of text, 0 and 0.0 can be generated to force correct data-type assignment.
dummy_data_header = 0   No dummy data line
dummy_data_header = 1   Dummy data line with "Dummy" for strings and "0.0" for numerals

Duration reporting:
duration_in_ms = 1   Duration is reported in milliseconds
duration_in_ms = 0   Duration is reported in seconds

Current version and date:
4.0.0, 7-oct-2020

Known problems:
None

Planned extension:
z-transformation and mean-subtraction

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