PRAATALIGN: PHONETIC ALIGNMENT MADE EASIER FOR PSYCHOLINGUISTIC DATA PROCESSING.

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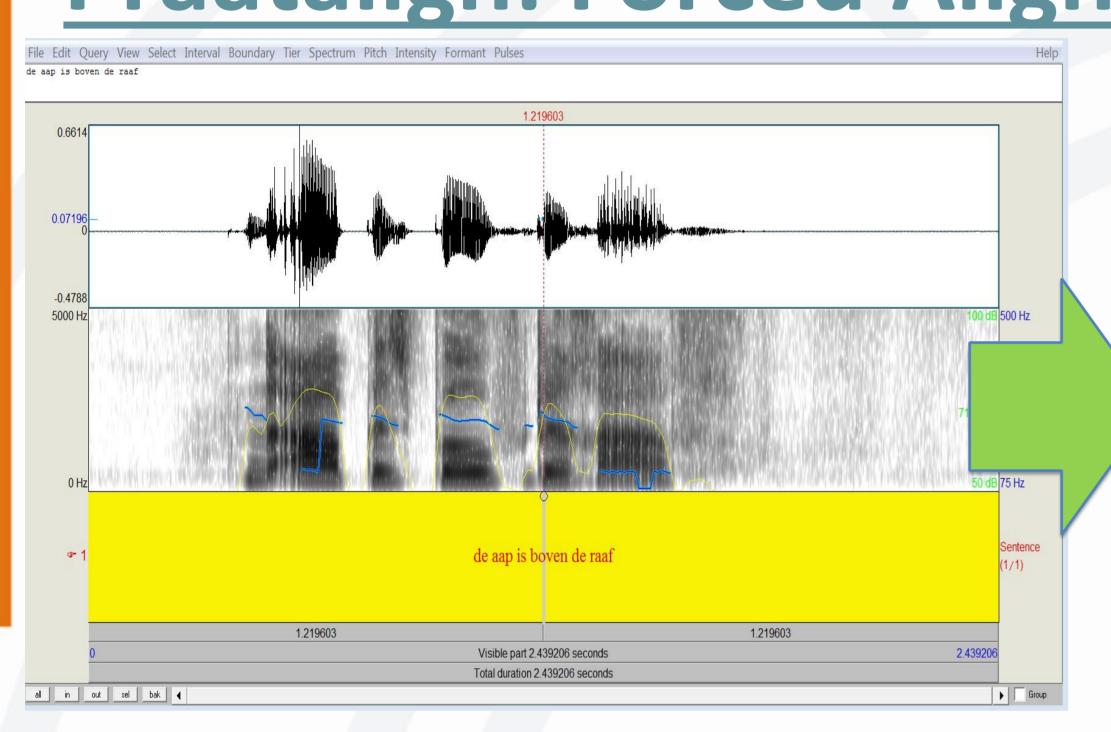
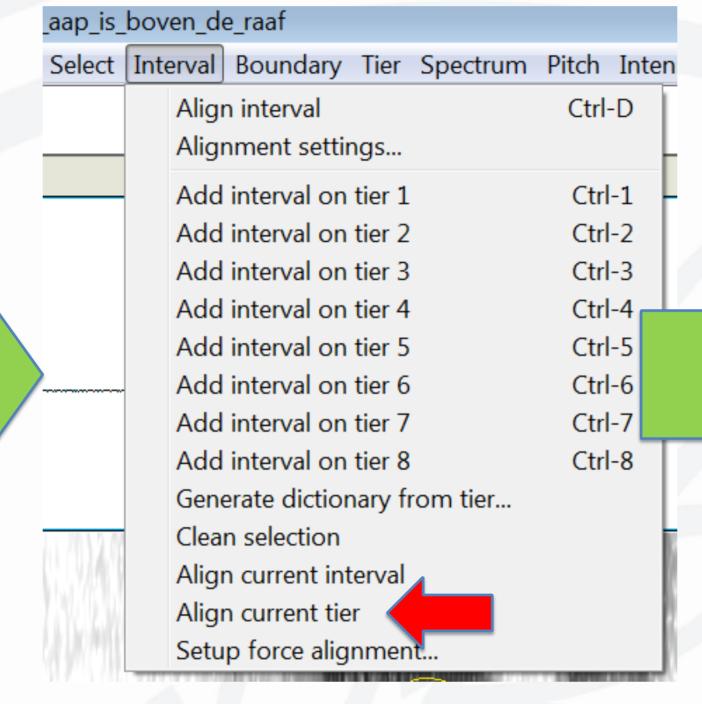## Manual Phonetic Segmentation

- Extremely time consuming and costly (1 min spontaneous speech == 13 hours of annotation) [1]
- Even when accompanied by phonetic transcriptions, manual forced alignment of a 15 min. corpus may require two hours of work. [2]
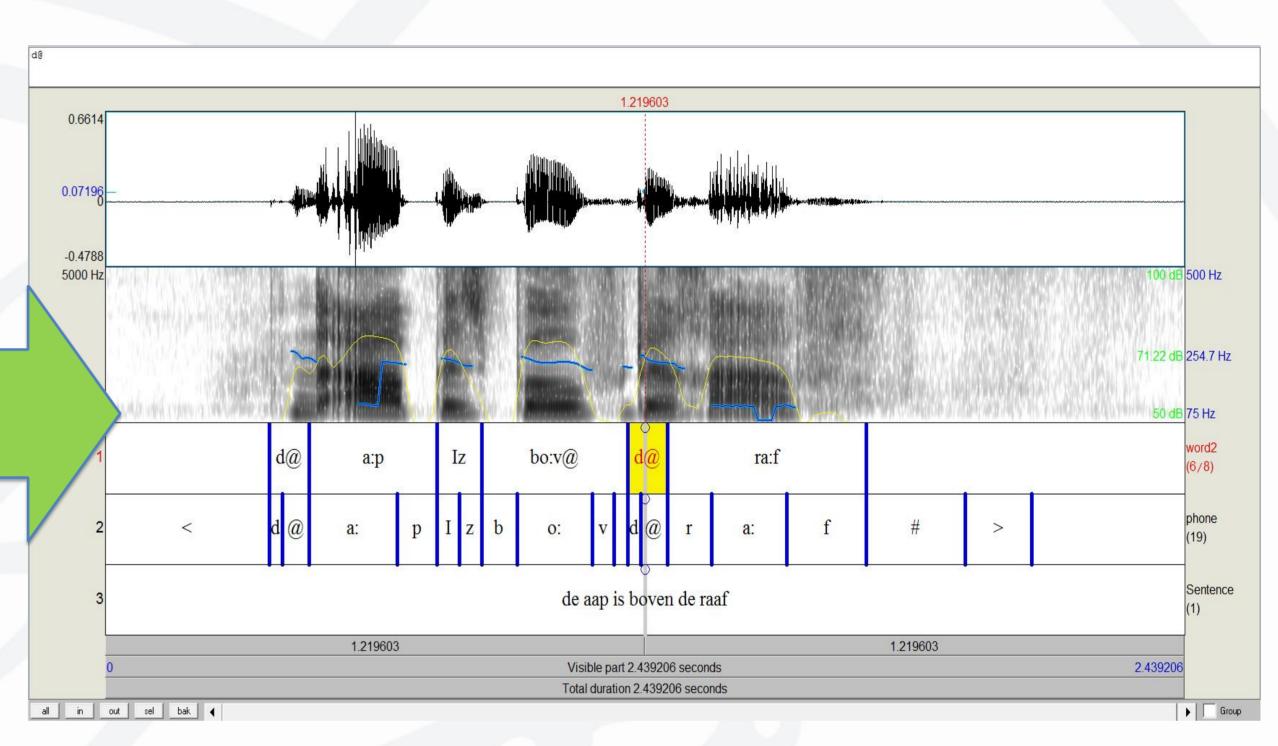
Psycholinguistic Experimentation

- Often uses tightly controlled stimuli in which the to-be-produced content is known beforehand.
- Unless it is the focus of the study, ignores phonetic variation in vocal responses (due to time/cost factors)
- Forced alignment may enable time- and cost-effective analysis of phonetic variation in such experiments.

• Praatalign: Forced Alignment in Praat [3]

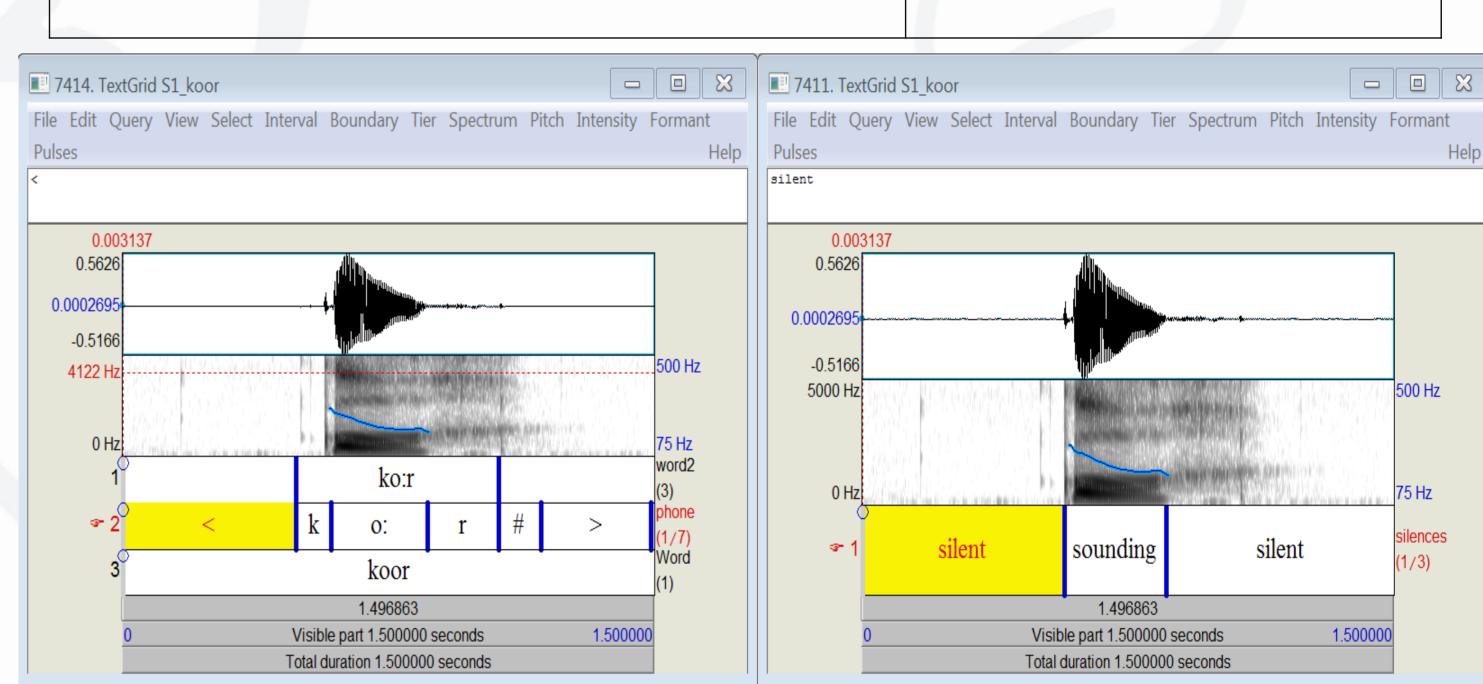## Manual vs. Automatic Segmentation

- Data derived from recordings obtained for experiment on speech perception. [4] 28 Speakers x 120 Words, read in citation format. Phonemic transcriptions obtained from DutchPond Database [5].

Segment Onset Comparison	<20ms	<10ms
H1 vs. Praatalign	64%	45%
H1 vs. Praatalign (Voiced Stops)	89%	78%
H1 vs. H2 (From [2])	87%	57%

PraatAlign vs. To Silences...

- Speech Onset Latency of raw recordings obtained in [4].
- Praatalign takes into account average duration of different phones.

Average SOL: To Silences...	487.76(161.95)
Average SOL: Praatalign	445.63 (151.68)

Discussion

- Unsupervised Praatalign forced alignment performs reasonably well in a fraction of the time. Excellent accuracy for voiced stops.
- Semi-supervised alignment and correction of outliers is also possible via interactive Praat scripting, when detail is required (such as VOT measurement).

For More Information On Use and Installation, Please Visit
http://dopefishh.github.io/praatalign/

References
References: [1] Schiel & Draxler (2003), Munich; [2] Goldman (2011), Interspeech'11; [3] Praatalign: an interactive Praat plug-in for performing phonetic forced alignment. A detailed manual for version 1:3. http://dopefishh.github.io/praatalign/book/book_1.3.pdf; [4] Schuerman, McQueen, & Meyer (2015) [5] Marian, Bartolotti, Chabal, & Shook (2012), PLOS One

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