Reliability Improvements for Phonetic Transcription of Lengthening
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Purpose
The purpose of this study was to determine ways to improve the reliability of narrow phonetic transcription of lengthening distortions in AOS. More specifically, we looked for ways to make the narrow transcription of segment lengthening more accurate and consistent among transcribers.

Background
Apraxia of speech (AOS) is a motor speech disorder with a wide range of characteristics. Analysis of these characteristics has been important in differentiating AOS from aphasia with phonemic paraphasia (APP), so clinicians can conduct an accurate diagnosis. These examinations have resulted in an AOS profile described as having a slow speaking rate and noticeable segment/intrasyllabic as well as intersyllabic pause prolongation. Previous research has considered the reliability of narrow phonetic transcription in coding this error due to it being a prominent symptom in AOS. Preliminary results showed low and insignificant intra-class correlation for lengthening coding among phonetically trained listeners who were not calibrated to operationally defined criteria (Cunningham et al., 2016). These results were surprising given past reports on excellent reliability for the coding of lengthening. To improve the reliability and consistency of coding prolongation, training and calibration in narrow phonetic transcription is needed.

Methods
After completing an introductory phonetics course, the first two authors were further trained in using narrow phonetic transcription. During a ten-week period, they coded several motor speech evaluations by speakers with profiles consistent with a diagnosis of aphasia and AOS, using 11 different diacritic marks. The amount of diacritics was reduced from previous transcription protocols to recognize patterns consistent among speakers with AOS and reduce cognitive load for the observers.

Each week of training, new diacritics were added to the transcription protocol. Students would transcribe independently and listen to supplemental ear training audio in order to advance their ability to perceive sub-phonemic variation. Weekly meetings were also held to discuss the progress and significance of our findings. Inter-observer transcription agreement for lengthening coding was estimated using point-to-point agreement for segments transcribed (#agreements/#agreements+#disagreements)*100. We then reviewed segments with disagreement to identify potential strategies for future transcriber training.

We found that our lack of training attributed to these results. Therefore, after using a specific protocol for training, we were able to locate prolongation errors with greater ease and accuracy.

Discussion
The inter-observer agreement improved during six weeks of training, from 35% before training to 71% after training. The first round of transcribing had higher amounts of lengthening diacritics to the amount found in the final round. During our analysis, we believed that higher amounts of lengthening were found in the first round of transcription for a few reasons. Since we had just been taught the possible presence of this distortion, it was likely that we executed an overuse of this diacritic. Also, our lack of training attributed to these results. Therefore, after using a specific protocol for training, we were able to locate prolongation errors with greater precision and high measures of reliability.

Suggestions:
- A condensed training protocol
- Ear training audio to help identify abnormal segment length relative to the speaker's rate of speech
- Supervision and discussion of transcription practices throughout the research process to increase measures of reliability and consistency

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References