THURSDAY, FEBRUARY 17, 2022

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Longitudinal development of marginal and canonical babbling in young children at risk for cerebral palsy

H. Long, T. Mahr, K. Hustad

The onset of canonical babbling is a known predictor of typical speech development. There is a growing research base evaluating canonical babbling onset and its emergence in infants at risk for motor speech disorders like cerebral palsy. To our knowledge there is no research evaluating the emergence of marginal babbling, the stage prior to the onset of canonical babbling. This study presents preliminary data on the longitudinal observation of marginal and canonical syllable production of 14 infants at risk for cerebral palsy using laboratory recordings of parent-child interactions. Children were retrospectively classified into three groups based on speech abilities at age 3 years: Not Yet Talking (n=5), Emerging Talker (n=4), and Established Talker (n=5). Marginal and canonical syllable ratios were calculated from the total number of syllables produced across Age and Group. All groups showed delays in the emergence of marginal and canonical babbling. Interestingly, none of the three groups consistently met the .15 criterion for onset of the canonical babbling stage. Preliminary differences observed between the three groups highlight the potential for identifying developmental vocal patterns in cerebral palsy to inform earlier detection of speech impairments. Additional implications of the motor speech system will be discussed.

Motor speech phenotypes in children with epilepsy

J. Iuzzini-Seigel, K. Allison, R. Stoeckel, E. Olsen, S. Tallman

Pediatric motor speech disorders are rare in the general population but occur at a much higher rate when associated with certain diagnoses. Our previous retrospective chart analysis of 143 children with suspected CAS revealed an increased rate of seizure disorders among participants. Data suggested that like children with galactosemia and cerebral palsy, children with epilepsy may represent another population at increased risk for motor speech disorders. This is essential information as it could impact early identification and targeted treatment for children with epilepsy—the number 1 neurological disorder affecting children. In the current study, 3 motor speech experts carefully phenotyped the speech characteristics of 13 children with epilepsy. Results revealed dysarthria in 46% of participants and language impairment in 86%. Findings suggest early identification and treatment of motor speech and language disorders are needed in this population.
**Sensitivity of age-specific speech intelligibility scores for differentiating between young children with and without dysarthria: Developmental cut-points for atypical speech intelligibility**  
K. Hustad, T. Mahr, J. Soriano, P. Rathouz

We created speech intelligibility growth curves for children with cerebral palsy and typically developing children between the ages of 2.5 and 8 years based on 513 longitudinal speech samples for children with CP and 538 cross sectional speech samples for typical children. We examined ROC curves and sensitivity / specificity results by age for differentiating among groups of children. Results showed that 81% of children with speech motor impairment could be identified by 3 years of age based on a 10th percentile TD threshold of 32% intelligibility. Thresholds for other ages and sensitivities and specificities will be provided. Implications will be discussed.

**Contributions of vowel acoustics to speech intelligibility in typically developing children**  
V. Berisha, T. Mahr, K. Hustad

Vowels make important contributions to intelligibility in children with dysarthria. We examined whether these findings held in typically developing children. We compared two unsupervised acoustic measurements for vowel productions in 41 typically developing 3–6-year-old children, and we examined how these acoustic measures predicted intelligibility. The measures were vowel space area (VSA) and a speech-recognition-based phoneme log-likelihood ratio (PLLR). Both measures positively correlated with intelligibility, but only PLLR was a significant predictor of intelligibility over and above the effects of age.

**Effects of motor-based treatment on vowel accuracy and variability in children with childhood apraxia of speech**  
H. Valentine, M. Grigos

Vowel errors are prevalent in children with childhood apraxia of speech (CAS), but very little information is available on how these errors respond to intervention. This study examines how motor-based treatment targeting phoneme transitions may change vowel accuracy and variability in CAS. Seven young children with CAS participated in six weeks of Dynamic Tactile and Temporal Cueing (DTTC) treatment. Vowel accuracy and variability pre- to post-treatment are examined with acoustic and perceptual measures. The changes in vowel production in response to motor-based intervention are discussed along with their theoretical and clinical implications.

**Phonetic complexity in narratives of children with CAS**  
J. Case, A. Hallin

Childhood apraxia of speech (CAS) is a pediatric motor speech disorder where children commonly display comorbid language disorder (e.g., Lewis et al., 2004). Previous research has demonstrated that phonetic features of targeted stimuli can impact language production (Murray et al., 2019). The current study extended this work to examine whether children with CAS produce less phonetically complex targets within connected speech as a result of underlying motor deficits. Phonetic complexity was measured in children with CAS, non-CAS speech sound disorders, and typical development in the context of story retell narratives. Analyses investigated whether phonetic complexity differed across groups of children and the relationship between phonetic complexity and speech production accuracy, utterance length, and morphosyntactic accuracy. It will be discussed whether underlying motor deficits could contribute to cascading language production difficulties in children with CAS.
Current research on typical speech motor development can inform the understanding of pediatric motor speech disorders, especially when said research adopts a process-oriented perspective rather than an outcome-oriented perspective. The objectives of this talk are to distinguish between these different perspectives on development and defend the claim that one is now more useful than the other for understanding disorder. The defense will take the specific example of work on the typical development of coarticulation. A survey of classic and recent findings will detail the complexity of the phenomenon and identify the generalizations about speech motor development that have been made based on the findings. The implications of these generalizations for pediatric motor speech disorders, such as childhood apraxia of speech, will be considered. The gaps in explanation that remain for understanding the typical development of coarticulation represent the limitations of current models of coarticulation, which are outcome oriented. A process-oriented model of coarticulation will be outlined and its implications for understanding developmental disorders considered. The argument is not that this new model is the final one, but rather that it is now time to supplement what we have learned about motor speech development from an outcome-oriented perspective with what we can learn from a process-oriented perspective.

Pediatric motor speech disorders are underrepresented in research on communication disorders. As regards childhood dysarthria, for example, there are only few comprehensive descriptions of the clinical picture available (e.g., Haas et al., 2021). Major conceptual questions remain unanswered, specific approaches for assessment and treatment are scarce (e.g., Levy et al., 2021). Previous research on childhood dysarthria is largely based on concepts and knowledge from dysarthria acquired in adulthood. The fact that children with dysarthria are still in the process of speech motor development is often not taken into account systematically. For instance, most studies do not compare speech characteristics of children with neurological conditions with typically developing children’s speech. However, since symptoms of childhood dysarthria perceptually overlap with developmental speech features, such a comparison is indispensable for a valid description of childhood dysarthria (Schölderle et al., 2020).

On the one hand, it is therefore a methodological necessity to integrate knowledge about typical developmental trajectories into research on childhood dysarthria (e.g., by applying age-specific norms). On the other hand, analyzing typically developing children’s speech by means of established neurophonetic methods may provide an opportunity to deepen our knowledge about typical development. In this context, it should be evaluated thoroughly if concepts usually applied to describe dysarthric speech are appropriate to analyze typical motor speech development.

In my talk, I will present a series of studies with the major aim to provide a comprehensive clinical description of childhood dysarthria. One major focus of these investigations was on auditory perceptual features corresponding to the most relevant functional domains of speech, i.e., respiration, phonation, articulation, and prosody. Other experiments addressed communication-related parameters such as intelligibility and naturalness of speech. The common approach of these studies was that childhood dysarthria was always analyzed against the background of typical motor speech development. For this purpose, a large group of typically developing children underwent extensive auditory-perceptual neurophonetic assessment. I will discuss the results of these assessments in terms of what they reveal about typical development and address the question if neurophonetic concepts are informative to describe typical speech motor development.
An articulatory kinematic study on Parkinson’s disease in relation to acoustic and perceptual measures
A. Thompson, Y. Kim

This study aims to (1) examine the perceptual, acoustic, and articulator-specific movement differences in speakers with and without Parkinson’s disease (PD) and (2) understand the predictive value of selected acoustic and kinematic measures for two measures of speech perception (i.e., ratings of speech intelligibility and articulatory precision). Twenty participants (10 PD, 10 healthy controls) were asked to read the Caterpillar passage in a conversational speaking style. Acoustic and kinematic data were collected simultaneously using an electromagnetic articulography system. Recordings were analyzed using a selection of well-established acoustic correlates of speech intelligibility (i.e., acoustic vowel space area [VSA], acoustic contrasts, and second formant frequency [F2] slope) and their theoretical parallel kinematic measures (i.e., kinematic VSA, distance, and speed) measured from the tongue and jaw articulators. Preliminary data show that speakers with PD exhibit reduced acoustic and kinematic measures relative to healthy speakers. However, the data show a clear group difference for the tongue-related measures but little-to-no group differences for the jaw-related measures. Further, positive relationships are observed between speech intelligibility and acoustic VSA, acoustic distance, and tongue-related measures. A similar trend, but to a lesser extent, is observed for the jaw measures. Perceptual, acoustic, and articulator-specific group differences, as well as the relationship between speech perception and the selected acoustic and kinematic measures, will be discussed in detail in the presentation.

Vowel acoustics as predictors of speech intelligibility in dysarthria
A. Thompson, M. Hirsch, Y. Kim, K. Lansford

This study examines the predictive value of a selection of acoustic vowel measures for two methods of measuring intelligibility (i.e., orthographic transcriptions and visual analog scale [VAS] ratings). The Grandfather Passage was read aloud by twenty speakers with dysarthria of varying etiologies, including Parkinson's disease, amyotrophic lateral sclerosis, Huntington's disease, and cerebellar ataxia. Recordings were analyzed using token-based (i.e., acoustic vowel space area [VSA], corner dispersion) and trajectory-based (i.e., VSA hull area, vowel space density [VSD]) acoustic vowel measures. Seventy naïve listeners were recruited via a crowdsourcing website to provide orthographic transcriptions and intelligibility ratings using VAS. Two multiple linear regression models will be created to model transcription accuracy and VAS ratings of intelligibility using the acoustic vowel measures as predictors. The strength of these models will be discussed in detail in the presentation.

Acoustic-prosodic entrainment in the conversations of neurotypical adolescents
C. Wynn, T. Barrett, V. Berisha, J. Liss, S. Borrie

Acoustic-prosodic entrainment describes the tendency for interlocutors to align their speech behaviors with one another and plays an important role in successful conversation. In order to entrain, individuals must perceive the acoustic-prosodic signals from their conversation partner and make dynamic alterations to their speech based on these signals. Therefore, robust speech perception and production skills are necessary. Evidence of entrainment in adults is well-established. However, research regarding its occurrence in the speech of adolescents is sparse. Because adolescence is a time when speech perception and production processes are undergoing significant developmental changes, the ability to entrain may emerge during this stage. Indeed, evidence from tightly controlled laboratory studies suggest this to be the case. Here, we examine the acoustic-prosodic entrainment patterns of neurotypical early-adolescents engaged in conversational speech. To do this, we make use of a large, open-source corpus of 94 conversations elicited from individuals between the ages of 9 and 14 years. In this corpus, dyads completed the Diapix Task, a conversational task in which interlocutors must verbally work together to identify differences between picture
Entrainment analysis was completed using measures of local proximity and local synchrony for various speech features. Additional analyses were completed to compare entrainment measures across age groups. Preliminary analysis of these conversations indicated significant levels of entrainment in some acoustic-prosodic features in the speech of early-adolescents. Further, results were influenced by age, with younger children showing lower levels of entrainment than older children. These findings indicate that entrainment is a developmentally-acquired skill that is becoming refined and solidified across early-adolescence.

Effects of memory storage and execution on speech motor sequence learning
M. Masapollo, E. Zezas, D. Smith, F. Guenther

Motor chunking facilitates efficient speech sequencing by combining a series of individual articulator movements affiliated with phonological units into a cohesive representation that is more easily held in memory and rapidly executed. Previous research suggests that the consonant cluster and syllable are organized into chunks. Yet it is not fully understood if these are working memory or articulatory motor chunks because these two levels of representation were conflated in speakers’ productions. The current study began to address this issue using a motor-sequence learning paradigm. Native English speakers produced monosyllabic sequences composed of onset and coda consonant clusters that violated native phonotactic constraints. After intensive motor practice spanning two days, speakers were tested on the production of pairs of transfer syllables that overlapped with the practiced syllables to varying degrees. We found that performance improvements from practicing syllables with non-native consonant clusters partially generalized to novel syllables that contained those clusters, but only if they occurred in the same syllable position as in practice (onset vs. coda). Furthermore, during the production of the second syllable in a pair (which required longer storage in a working memory buffer during concurrent articulation of the first syllable), when the syllable location of a learned cluster changed, performance deteriorated such that it was even worse than performance on novel syllables with novel clusters. Practicing the whole syllable, however, resulted in larger performance gains compared to practicing just the clusters. These findings suggest that speakers code the serial ordering of phonemes in memory in a syllabic structural frame (onset-nucleus-coda), and learn to sequence and coordinate the articulatory movements affiliated with those phonemes in those particular contexts.

Speech intelligibility outcomes associated with treatment for acquired apraxia of speech
J. Wambaugh, S. Mauszycki, L. Bunker, D. Bailey

The purpose of the current investigation was to examine changes in speech intelligibility in a group of 22 speakers with AOS and aphasia who received Sound Production Treatment (SPT). Each participant was administered the Assessment of Intelligibility of Dysarthric Speech twice prior to treatment and twice at 8 weeks after completion of treatment. Expert listeners scored intelligibility samples using orthographic transcription, followed by multiple choice selection. Post-treatment intelligibility scores were statistically significantly greater than pretreatment scores for both multiple choice scoring and transcription scoring. These findings indicate that substantial gains in single word speech intelligibility were associated with application of SPT.

Effects of intensive voice therapy on vocal quality in individuals with Parkinson's disease
G. Moya-Gale, J. Spielman, L. Campanelli, Y. Maryn, L. Ramig

It has been well established that most individuals diagnosed with Parkinson's disease (PD) develop voice and speech difficulties during the course of the disease (Logemann et al., 1978). The Lee Silverman Voice Treatment (LSVT LOUD®; Ramig et al., 2001) targets voice and speech deficits in PD through high-effort
exercises focused on increasing healthy vocal loudness. While there is ample evidence that LSVT LOUD improves a variety of voice and speech characteristics, as well as speech intelligibility (Levy et al., 2020; Schulz et al, 2021), less is known about its effects on voice quality. Given the potential impact of voice quality on intelligibility, as well as the role of dysphonia in communicative participation in people with PD, the purpose of this randomized controlled trial was to evaluate the effects of two intensive speech treatments (LSVT LOUD and LSVT ARTIC™) on this vocal parameter, as measured by the acoustic voice quality index (AVQI; Barsties & Maryn, 2016), an objective measure of dysphonia. AVQI scores significantly improved pre-to-post treatment and pre-treatment to follow-up in the LSVT LOUD group only, suggesting an improvement in vocal quality that was maintained over time. Most importantly, the very large effect size obtained in this treatment group provides evidence of treatment efficacy to target dysphonia in this population.

Predictors of individual differences in L2 vowel production
J. Jingwen Li, D. Shiller, X. Tian, M. Grigos

Producing second language (L2) speech sounds without an accent is challenging for many speakers. The accuracy of L2 speech sound productions may be related to speakers’ sensory acuity in auditory and somatosensory domains. Factors such as production variability, phonological awareness, and the perceptual similarity between L2 targets and first language (L1) vowels may also play important roles in L2 production. The present work examines predictors of individual differences in German vowel production accuracy in Mandarin adult learners of German (N=40). Participants’ auditory acuity is assessed using a speech identification task and an AXB staircase discrimination task. Somatosensory acuity is measured using a novel visually instructed articulation task. Accuracy in the production of German tense vowels is measured by the Euclidean distance to the center of the target distribution in F1-F2 space. Linear mixed-effects models are used to analyze the effects of auditory and somatosensory acuity, production variability, and phonological awareness in predicting German vowel production accuracy. The theoretical and clinical implications of findings are discussed which shed light on individualized L2 learning.

Effect of clear speech on acoustic measures of prosody in speakers with and without Parkinson disease
A. Gravelin, J. Whitfield

The purpose of the current study was to investigate the effect of a clearer than usual speaking instruction on acoustic measures of speech prosody in the read and extemporaneous speech of speakers with Parkinson Disease (PD). Speakers with and without PD completed reading and extemporaneous speech tasks using clear and habitual speech. Recorded responses were segmented into clause complexes specified by the Systemic Theory of Functional Linguistics. Acoustic measures of fundamental frequency variation, speech timing, and pause of each clause complex were examined. Results revealed all speakers exhibited a clarity-related reduction in articulation rate in the reading task, but only control speakers reduced articulation rate in the extemporaneous task. Results suggest speakers with PD exhibit a less robust clear speech response than control speakers and that the clear speech response may be mediated by speaking task.

Vowel distinctiveness and expressive language in low- and minimally verbal children with ASD
K. Chenausky, H. Tager-Flusberg, J. Green

Up to ¼ of low- and minimally verbal (LMV) children with autism experience comorbid motor speech impairment, which also affects expressive language. We investigated the relationship between an acoustic measure of vowel production and expressive language scores in 13 LMV children with autism (6 F) aged...
5;0-7;11 (mean 6;11, SD 0;10). F0 and F1-F3 for the corner vowels and schwa were measured and normalized for differences in vocal tract length. Mean Euclidean distance from each corner vowel to schwa was calculated for each child. This measure of vowel distinctiveness was significantly correlated with and accounted for almost half of the variance in concurrent expressive language. Results are consistent with previous work showing that motor speech ability contributes to expressive language ability in at least some children with LMV ASD and suggest that a measure of vowel distinctiveness may hold promise as an early indicator of future expressive language difficulty in these children.

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Acoustic and kinematic vowel space areas associated with varied intelligibility
C. Kuo, J. Berry, M. Barrett

This study evaluates how vowel space area (VSA) measured acoustically and kinematically may reflect speech outcome. Four healthy speakers, four highly intelligible speakers with Parkinson’s disease (PD), and four survivors of acute brain injury with low intelligibility are studied. Speech kinematic data were captured using 3D electromagnetic articulography with simultaneous acoustic recording during passage reading. Acoustic VSA is calculated from vowel mid-point formant values. Kinematic VSA is generated from a convex hull area that surrounds the vowel representations in the articulatory space. To address variability, kinematic and acoustic normalization procedures are applied, and measures with/without normalization are examined. It is hypothesized that VSAs differ between groups in both signal domains and that the magnitudes of differences are impacted by normalization, suggesting important methodological considerations in defining objective correlates of intelligibility using VSA.

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Variability is actively regulated in speech
D. Tang, C. Niziolek, B. Parrell

Although movement variability is often attributed to unwanted noise in the motor system, recent work in reaching demonstrated that variability may be actively controlled. The current study examined how variability may be regulated during speech production. Specifically, we assessed the effects of auditory feedback manipulations that modulate perceived speech variability, shifting every production either towards (inward-pushing) or away from (outward-pushing) the center of the distribution for each vowel. Participants exposed to the inward-pushing perturbation increased produced variability while the perturbation was applied as well as after it was removed. Unexpectedly, the outward-pushing perturbation also increased produced variability, but only during exposure to the perturbation. Together, these results suggest that motor variability is actively monitored and regulated even in complex and well-practiced behaviors, such as speech.

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The effectiveness of expiratory muscle strength training via tele-health to improve communication in ALS
B. Kiefer, J. Huber, M. Troche

Muscular atrophy is a detrimental consequence of Amyotrophic Lateral Sclerosis (ALS). Atrophy of the respiratory musculature negatively impacts speech as it requires ample and coordinated respiratory support to reach high levels of intelligibility and naturalness. Expiratory Muscle Strength Training (EMST) is a paradigm that has been found to strengthen the respiratory musculature for individuals with neurodegenerative diseases, however, few have studied the effectiveness of EMST for individuals with ALS. Further, treatment accessibility has been restricted by the pandemic. The aims of the current study are: 1) to determine whether EMST is feasible for individuals with ALS and speech-language pathologists to
implement via telehealth, 2) to determine how moderate intensity EMST impacts communication for individuals with ALS, and 3) to identify how EMST affects the psychosocial states of individuals with ALS.

Protocol for a two-arm cross-over randomized control trial examining Dynamic Temporal and Tactile Cueing (DTTC) and usual care in Childhood Apraxia of Speech Treatment

P. McCabe, J. Preston, E. Maas, A. Purcell, D. Thomas, E. Murray, M. Gomez, R. Heard, P. Cronin

This paper reports the registered protocol for a two-arm cross-over randomized control trial study comparing Dynamic Temporal and Tactile Cueing (DTTC) in three dose-frequency presentations with usual care. The study is being conducted across 10 sites in two countries with 120 children with moderate to profound childhood apraxia of speech and no other conditions being prospectively recruited across two arms. The aims of the study are to
1. To demonstrate treatment efficacy of DTTC compared to usual care in children with moderate-severe childhood apraxia of speech.
2. To determine the extent to which practice distribution impacts treatment outcomes.
3. To evaluate the cost-effectiveness of DTTC delivered in different schedules.

Speech perception abilities among children with childhood apraxia of speech: Preliminary findings

M. Beiting, J. Iuzzini-Seigel, E. Maas

Although childhood apraxia of speech (CAS) is a speech motor planning impairment, impaired speech perception in children with CAS has also been reported. Speech perception, in particular the ability to discriminate target and incorrect productions, is important for developing and monitoring speech motor plans, and thus for treatment. This study investigates speech perception in 12 children with CAS (4-9 years) enrolled in intensive integral stimulation-based treatment. Specifically, we used naturally spoken words in a discrimination task and a mispronunciation detection task to examine perception of consonants and vowels, change following treatment, and associations with age and measures of speech, language and cognition. There were no differences between consonant and vowel perception or following treatment, but a moderate-strong correlation with age suggests that speech perception may be suboptimal for speech motor learning in children with CAS. [Supported by NIH F31 DC018723]

The relationship between vocal onset time and vocal onset fo in children

E. Heller Murray, A. Chao, O. Quinn

This study examined the relationship between voice onset time (VOT) for voiceless consonants and vocal onset fo for the subsequent vowel in children. Longer VOTs were related to increased vocal onset fo, potentially due to the carryover of vocal tension during the voiceless consonant. Younger children (2.58-3.92 years) with shorter VOTs had increased within-subject variability of vocal onset fo, while older children (4.33-6.83 years) with shorter VOTs had increased within-subject variability of VOT. VOTs in younger children may be impacted by immature laryngeal development, while VOTs in older children are more influenced by the development of speech motor control.
Towards a typology of speech sound disorders
S. Diepeveen, B. Maassen, H. Terband, L. van Haaften, B. de Swart, A. van de Zande, C. Huigh

Speech-Language Pathologists (SLPs) can use numerous different assessments to diagnose children with SSD and there are also several classification systems that can help the SLP during the process. However, these systems are not based on determining the underlying deficits and the involvement of the different speech production processes. The current study was conducted to investigate a process orientated diagnosis more closely, by identifying and describing deficits and subgroups within the population of children with SSD in the Netherlands. A broad test battery including the Computer Articulation Instrument (CAI) (Maassen, et al., 2019) was administered to 150 four to seven-year-old children with SSD. The speech problems of the participating children can be labeled as falling into three general types: I) mild phonological deficit; II) mild phonological deficit with a motoric deficit; III) severe phonological and motoric deficit.

Reliability of perceptual measurement of AOS assessment characteristics
K. Nealon, R. Amir, L. Edmonds

Background: Diagnostic accuracy and reliability of AOS with co-occurring aphasia and/or dysarthria is crucial for appropriate treatment selection and clinical decision making. However, a lack of operationalization of AOS assessment methods have contributed to inadequate interrater reliability of perceptual features of AOS. Methods: Speech production errors of forty individuals with aphasia in response to the spoken language subtest stimuli of the WAB-R were analyzed. Interrater reliability of perceptual measurements of features of AOS when using consistent assessment stimuli, measures and trained raters using narrow transcription methods were examined.
Results: Differentially diagnostic as well as non-discriminatory speech characteristics were reported with adequate interrater reliability across a variety of aphasia subtypes and severities.
Discussion: These preliminary results findings support the operationalization of assessment methods of AOS with co-occurring aphasia.

Speech movement variability in adults who stutter: What is the influence of prosody?
H. Kopera, M. Grigos

Although a link between stuttering and prosody has been suggested for many years (e.g., Bergmann, 1986; Brown, 1938; Klouda & Cooper, 1988; Prins, Hubbard, & Kraus, 1991; Wingate, 1984), much remains to be known about how prosody influences speech motor control in people who stutter. Past work in this area has examined limited aspects of prosody in simple, non-meaningful speech tasks that are not representative of prosodic demands in communicative situations. To address this knowledge gap, this project used a question-answer task to manipulate prosodic structure through changes in semantic focus. Participants were adults who stutter (AWS) and matched adults who do not stutter (AWNS). A motion capture system tracked articulator movement as participants responded to questions presented by the experimenter. Kinematic analyses were conducted to examine how focus-induced changes in prosodic prominence impact speech movement variability within and across utterances in AWS compared to AWNS.

Remote administration of sound production treatment for acquired apraxia of speech
L. Kallhoff, S. Mauszycki

The purpose of this investigation is to systematically examine the administration of SPT via telehealth and compare the treatment and generalization effects with the existing in-person outcomes for SPT. This
investigation employs a single-subject multiple baseline design across behaviors and participants to examine the effects of treatment. Four target phonemes were selected for treatment for participant 1 after pre-treatment assessment. The accuracy of the words containing the target speech sound served as the dependent variable and was measured repeatedly during baseline, treatment, and maintenance/follow-up phases. The Sound Production Treatment (SPT) was administered in two phases—two target speech sounds for each phase of treatment. Preliminary data from the first participant indicates that SPT via telehealth resulted in increased articulatory accuracy for treated and untreated items. The second participant is in recruitment and is expected to complete treatment in December.

Phonetic word complexity in narratives produced by people with AOS of varying etiology
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People with apraxia of speech often make errors on words with high phonetic complexity, which are often used in motor speech examinations to elicit errors. The purpose of this study was to determine the complexity of words chosen in a semispontaneous speech task by speakers with and without apraxia of speech due to stroke or progressive disease. Participants included 28 stroke survivors (21 with and 7 without AOS), 20 with primary progressive aphasia (13 with and 7 without AOS), and 31 neurotypical controls. Words from transcribed Cinderella story retellings were analyzed using the Word Complexity Measure and compared across groups. Word complexity was highest for samples produced by controls, followed by those with progressive disease, with lowest complexity for stroke survivors. Contrary to predictions, there was no difference attributable to AOS. Discussion will include alternative factors that may impact word complexity in these samples.