Cutting the Pie is No Piece of Cake: Towards an Understanding of Underlying Impairments in Pediatric Speech Sound Disorders

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ABSTRACT

Pediatric speech sound disorders (SSD) affect approximately 3.6% of children under 10 years old (Eadie et al., 2015; Shriberg et al., 1999; Wren et al., 2016), which translates to about 22,000 Danish children (based on www.statbank.dk estimate of 618,000 children under 10 in Denmark) and more than 1.4 million children in the US (based on US Census Bureau estimate of 40 million children under 10 in the US). In the US, ~90% of school-based speech-language pathologists (SLPs) serve children with SSD, who represent the largest proportion of the caseload (~19%) (ASHA, 2020).

There is wide agreement that there are different types of SSD, varying in both observable errors and presumed underlying impairments. A broad division is between "phonological disorders" (PD), with a presumed underlying impairment in phonological aspects of speech production, and "childhood apraxia of speech" (CAS), with a presumed underlying impairment in motor planning aspects of speech production. However, the precise nature of such impairments, and how to identify them, remains poorly understood.

In this webinar, we present a conceptual approach to assessment and diagnosis of pediatric SSD that holds promise for deepening our understanding of SSD. First, we briefly describe some of the main challenges, both theoretical and clinical, to understanding SSD. Next, we provide an overview of a process-oriented approach that is grounded in current psycholinguistic and speech motor control theories. After a brief introduction to such models, we then illustrate how specific impairments may manifest and be assessed. Although this approach continues to be developed, one important take-away at a conceptual level is that there are likely different SSD subtypes not only at a coarse-grained level (PD vs. CAS) but also at a finer-grained level (e.g., subtypes of PD, subtypes of CAS). Finally, we will discuss challenges, future directions, and clinical implications of this approach.