Editorial

Auditory Processing Disorders in Children

Auditory processing disorder (often called CAPD) is not a new entity. For decades, there has been an awareness among members of our own profession and others that individuals exist who, despite normal peripheral hearing sensitivity, exhibit auditory difficulties, especially in challenging listening environments. In 1954, Helmer Myklebust, in his book Auditory Disorders in Children, discussed the presence of what he termed “central hearing loss” in the pediatric population. Also in the mid 1950s, Bocca et al began to develop and pilot behavioral auditory tests designed to assess auditory function beyond the peripheral system. Since that time, and despite considerable interest and attention given to the topic, we have been largely unsuccessful in arriving at a consensus regarding even the existence of auditory processing disorders. Thus, it should be of little surprise that generally agreed-upon methods of defining, assessing, and managing auditory processing disorders continue to elude us.

One reason for this is the inherent complexity of the central auditory system. Although research into the neurophysiologic and neuroanatomic bases of audition is ongoing, there is much we do not yet understand about what occurs in the auditory system beyond the cochlea. Furthermore, for the vast majority of practicing audiologists, our clinical preparation programs simply did not (and, in large part, still do not) provide adequate education regarding central auditory processes. Finally, and perhaps most importantly, much of the critical information regarding auditory processing disorders and their impact on education and communication may be found in journals and educational programs of disciplines other than our own, including speech-language pathology, psychology, cognitive neuroscience, education, and the like. As such, any endeavor to make sense of auditory processing and its disorders must be a multidisciplinary one. This fact, perhaps more than any other, has impeded our ability to untangle the quagmire of theory that is auditory processing disorder, for, like the blind men and the elephant, each of us is focusing on our own small portion of the beast and drawing conclusions regarding the nature of the animal, with little regard for the other components and participants.

Despite these problems, however, interest in and understanding of auditory processing disorders have steadily increased in recent years. In addition, the relatively recent upsurge in public awareness of auditory processing disorders has resulted in a concomitant dramatic increase in demand for clinical services focusing on assessment and management of auditory processing disorders. As a result, never has there been such a pressing need for practicing clinicians to have available to them information regarding the underlying science of auditory processing and methods of assessment and management of auditory processing disorders that can be readily applied to the clinical setting. This

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special issue of JAAA seeks to do just that. Although it is not possible to incorporate into one source everything that is currently known about auditory processing and its disorders, this special issue provides an overview of many of the most salient and clinically relevant topics in the field of auditory processing disorders in children.

Because an understanding of the underlying science of auditory processing is critical to any discussion of methods of assessment and management, two of the five articles in this special issue have as their primary focus the neurophysiologic mechanisms mediating auditory perception, especially speech perception. Dawn Burton Koch and her colleagues at Northwestern University provide an overview of the results and implications of ongoing research into the neural representation of speech signals in normal and disordered populations. Using both behavioral and electrophysiologic methods, they demonstrate how such an approach may be used to better understand the underlying bases of auditory processing deficits in some children.

Dennis Phillips discusses temporal processes in auditory perception, a topic that has garnered much interest in recent literature, and shows how findings in auditory gap detection have aided our understanding of central auditory processing disorders.

Two articles in this special issue focus on interpretation of central auditory assessment tools and differential diagnosis, topics that have significant implications for the practicing clinician. Both of these articles emphasize the need for multidisciplinary collaboration in assessment of auditory processing disorders. Gail Chermak, Jay Hall, and Frank Musiek provide a timely discussion of a quandary that faces many of us in the educational and clinical setting today: differentiating auditory processing disorder and attention deficit hyperactivity disorder (ADHD). Included in their treatment of this topic are characteristics common to both disorders, as well as methods of separating CAPD from ADHD and differential management strategies for each. The article by myself and my colleague, Jeanane Ferre, discusses the need for differential diagnosis under the general “umbrella” of auditory processing disorder, and describes how results of central auditory assessment tools may be viewed along with findings from other disciplines to clarify the nature of a given child’s auditory processing deficit and make recommendations for deficit-specific management.

Finally, no discussion of auditory processing disorders in children would be complete without specific attention given to methods of intervention and management of such disorders. To this end, Frank Musiek provides an overview of three deficit-specific management approaches that can be used by a variety of professionals, as well as by parents. Included is a discussion of speech-sound discrimination training as well as management approaches that go beyond traditional auditory phonemic training and address both higher level auditory skills such as auditory closure and memory and non-linguistic (i.e., prosodic) perceptual skills.

As audiologists, our primary responsibility is the evaluation of audition, which encompasses far more than pure-tone peripheral hearing sensitivity and cochlear function. It is my hope that the articles in this special issue will serve to clarify for the practicing clinician some of the key concepts surrounding scientific underpinnings and current state-of-the-art clinical practices, as well as increasing awareness of the need for communication among disciplines, in the field of auditory processing disorders in children. In addition, I hope that this special issue generates interest in needed research into these three key areas: underlying science, reliable methods of assessment, and treatment efficacy. As we move into the new millennium, armed with ever-increasing knowledge and opportunities for multidisciplinary collaboration, we have available to us the tools and resources needed to achieve our ultimate goal: the amelioration of auditory processing disorders in children.

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Guest Editor