Guest Editorial

Revealing the Dynamics of Lexical Processing in Children with Hearing Loss

Traditionally, clinical research on childhood hearing impairment has used global, rather than componential, behavioral measures of performance. An example is the proportion of items accurately repeated on a phonemically balanced word test. Global measures provide many useful insights into the overall performance that can be achieved by children with hearing loss and successfully document the degree of general impairment in a variety of domains. These measures also have been invaluable as screening tools to identify individuals with normal versus abnormal abilities. At the same time, however, global measures lack the sensitivity to capture other aspects of performance that can be critical to understanding the nature of the complex interactive processes underlying language processing in real time. Global measures may gloss over important details about the particular perceptual, linguistic, or cognitive factors that may account for abnormal function. Further, little is revealed about the dynamic interactions among critical factors that play out in various ways over the time course of processing. This kind of information is essential for appreciating the heterogeneity of childhood hearing disorders and for developing and applying effective clinical assessment and remediation programs.

Contemporary processing models require that assessment tools provide information about hierarchies of levels, such as auditory, phonetic-phonologic, and semantic. The research we report in this issue examines two of these levels, phonologic and semantic, in children with normal or impaired auditory-perceptual abilities (picture naming by children with hearing loss: the effect of semantically related auditory distractors and the effect of phonologically related auditory distractors). We assessed children's knowledge about the meanings and names of words with a cross-modal picture naming task. Children named pictures while they were trying to ignore auditory distractors that were either unrelated, phonologically related, or semantically related to the picture (e.g., naming a picture of a bus while hearing either "lamp," "bug," or "car"). In this situation, the distractor facilitates or interferes with naming, depending on its relationship to the picture and whether the distractor is presented before, during, or after the onset of the picture. The patterns of facilitation and interference provide an implicit measure of the nature of children's word processing over and above the overt naming response. With this task, we can evaluate the content and organization of the "mental dictionary" in children and the dynamics of lexical processing in real time. More generally, studies that evaluate these processes in children with a range of perceptual abilities should also yield valuable insights into the role of auditory input in lexical acquisition.

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