Speech perception in deaf children with cochlear implants. David B. Pisoni, Dept. of Psychology, Indiana University, Bloomington, Indiana, USA. [Full Paper Available on CD]

Cochlear implants work reasonably well in many profoundly deaf adults and children. For a prelingually deaf child, the electrical stimulation transmitted by a cochlear implant represents the introduction of a new sensory modality that provides spectral and temporal information about speech and spoken language. Despite the success of cochlear implants in many deaf children, large individual differences have been reported on a wide range of speech and language outcome measures. This finding is observed in all research centers around the world. Some children do extremely well with their cochlear implant while others derive only minimal benefits after receiving their implant. Understanding the reasons for the variability in outcomes and the large individual differences following cochlear implantation is one of the most important problems in the field today. In this paper, I present a brief summary of recent findings on the speech perception skills of deaf children following cochlear implantation. The results of these studies suggest that in addition to several demographic variables, variation in children’s success with cochlear implants also reflects fundamental differences in rapid phonological coding and verbal rehearsal processes used in working memory.