Editorial

Hearing Handicap

This issue of JAAA provides a unique opportunity to compare two quite different approaches to the study of auditory handicap. It is usually assumed that handicap is overcome in proportion to improvement in speech understanding. The problem has been how to measure speech understanding in the hearing impaired. What kinds of speech materials should be used? How should they be presented? And what sort of data should be collected?

One can conceive of a continuum of possible test design strategies, ranging from an intensely analytic approach (e.g., confusion matrix analysis of nonsense syllable responses) to a more synthetic approach (e.g., asking the subject how much trouble he has understanding speech in real life situations). The various techniques that have been proposed over the years for the measurement of speech understanding in the hearing impaired are all located at some point on such a continuum.

Larry Humes’s paper, “Understanding the Speech-Understanding Problems of the Hearing Impaired,” is an eloquent exposition of the analytic approach. The emphasis is on the predictable effect that hearing sensitivity loss exerts on consonant recognition. Computations of the residual auditory area, by means of the articulation index concept, then, provides an objective basis for optimizing the frequency characteristics of amplification and for predicting the effects of background noise. The ultimate validation of these concepts rests squarely on correlations between computed predictions and actual performance on nonsense syllable tests, the latter heavily dominated by the ability to recognize consonants.

A more synthetic approach, on the other hand, is underscored in the paper by Newman, Jacobson, Hug, Weinstein, and Malinoff, “Practical Method for Quantifying Hearing Aid Benefit in Older Adults.” Using a self-assessment handicap scale to quantify the listener’s problems in understanding speech in everyday life, these authors report some surprising findings. They note, for example, that hearing aid benefit, as measured by this approach, was affected neither by degree of hearing sensitivity loss nor by monosyllabic word recognition score. Yet these two dimensions are central to the analytic approach. If handicap is predictable from these two dimensions (defined analytically) then benefit from intervention (defined synthetically) ought to reflect degree of impairment in these two dimensions.

It may be that the assumption of a close correspondence between audiometric measures and handicap is too simplistic. Certainly our experience with cochlear implant users suggests that speech understanding may not be the only relevant dimension of auditory experience to consider when evaluating benefit from intervention.

The interested reader is urged to compare these two interesting papers and to think about where, on the analytic-synthetic continuum, we should focus our attempts to measure the speech understanding of the hearing impaired. In addition it may be necessary to extend our concept of auditory handicap to include other dimensions of auditory experience.

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