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Stimulus effects on spectral shape discrimination

Mini Shrivastav^a and David Eddins^b

^aUniversity of Florida, 336 Dauer Hall, Dept. of Communication Sciences and Disorders, Gainesville, FL 32611, USA

^bUniversity of Rochester, Department of Otolaryngology, Rochester, NY 14618, USA

For a single stimulus such as shaped broadband noise, spectral-shape discrimination can vary based on the nature of the spectral feature that is being detected. For example, Shrivastav et al. (2006) found a significant difference in thresholds for broadband noise with a narrow localized spectral peak and those with a broad overall spectral change. They also found a moderate association between discrimination thresholds and speech-identification scores in older hearing-impaired listeners, but only for the stimuli with a narrow spectral peak. It is not clear whether these stimulus-dependent effects were associated with the bandwidth of the spectral peak, the slope of the peak, or a combination of these features. In the present study, spectral shape discrimination thresholds and speech recognition scores will be measured for 10 young normal-hearing and 10 older hearing-impaired listeners. The broadband noise will vary systematically in the bandwidth and the slope of a single spectral peak. The results will determine if and how spectral-shape perception changes with the nature of the stimulus paradigm used to measure it. Further, the results will also indicate if the association between spectral shape perception and speech identification is observed for all stimuli or only to a subset.