

The Categorization Of Ambiguous Vowel Stimuli By Hearing-Impaired Listeners

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Normal-hearing (NH) and hearing-impaired (HI) listeners labeled synthesized vowel stimuli that varied in both second and third formant frequency. The relatively dense and quasi-uniform sampling of the stimulus space allowed for comparison of the identification response patterns of NH listeners at different presentation levels and between NH and HI listeners. At the lower presentation level (75 dB SPL), NH listeners labeled stimuli consistently and with fairly abrupt transitions at category boundaries. Both the second and third formant influenced identification patterns. At the higher presentation level (95 dB SPL), although boundary locations changed little, transitions between categories were more gradual. HI subjects, listening only at the higher presentation level, were much less consistent in their responses. Transitions between categories were more gradual and boundaries tended to be influenced primarily by the second formant. Although HI listeners performed near normal levels when stimuli represent unambiguous category tokens, their performance was more variable overall. This may reflect greater ambiguity in the representation of vowels in impaired auditory systems resulting in increased category uncertainty and perhaps additional effort in vowel recognition. [Work supported by NIH].