METHODS

The purpose of this study was to measure dichotic word recognition at various intensity levels in order to produce a performance-intensity (PI) function that included the data for any test that requires a behavioral response from a listener, such as a dichotic listening task. It is important to understand the relationship between the stimulus and the response given. One way of characterizing this relationship is by generating a psychometric function, or in the case of speech recognition, a PI function. These functions display percentage of correct responses as a function of intensity in dB HL. The purpose of this study was to create a PI function based on the dichotic listening results from normal hearing young adults. The present study attempted to determine if the slope and threshold characteristics of the PI functions for dichotic listening differed between right and left ears as well as from that of monaural listening. Ten young adults with normal hearing were recruited to participate in the present study. Dichotic word recognition performance was measured at six different intensity levels. The results indicated a significant difference in the slope of the PI function between the right and left ears. Specifically, dichotic PI function slopes were shallower and thresholds were higher when compared to monaural functions.

PROCEDURES

Dichotic word recognition was measured at six intensity levels: 8, 16, 24, 32, 40, and 48 dB HL. Several practice items were given to make sure each subject understood the task. Each subject was presented with two lists at each intensity level, once during an ascending run and once during a descending run: 5 subjects began testing with an ascending run followed by a descending run; 5 subjects began testing with a descending run followed by an ascending run. Subjects were required to recall both words they heard in a free-recall response format (i.e., any order). No feedback was given as subjects completed the task, although encouragement was provided. Testing took place in a sound-proof booth and all equipment was calibrated according to ANSI standards (ANSI, 1987, 2004).

RESULTS

· The slope of the PI function for the right ear (3.05%/dB) was significantly steeper than the slope of the PI function for the left ear (2.64%/dB).
· The 50%-correct thresholds of the right (28.76 dB HL) and left ears (29.66 dB HL) were not significantly different.
· A right-ear advantage occurred at 32 and 40 dB HL, and a left-ear advantage occurred at 8, 16, 24, and 48 dB HL.
· Overall, subjects reached their 50%-correct threshold at around the same intensity level for both ears, but reached their maximum performance more rapidly in the right ear.

REFERENCES