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# Relationships between the modified rhyme test and objective metrics of speech intelligibility.

The Journal of the Acoustical Society of America **127**, 1903 (2010);<https://doi.org/10.1121/1.3384776>Gongqiang Yu *and* Anthony J. Brammer

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## Meeting abstract. No PDF available.

### ABSTRACT

Relationships between the modified rhyme test (MRT) and the speech transmission index (STI), and MRT and the speech intelligibility index (SII), have been obtained for additive stationary noise and nonlinear distortion of the speech signal. The former was speech-spectrum shaped noise, white noise, or  $-3$ -dB/octave noise presented at speech signal-to-noise ratios ranging from  $-25$  to  $+10$  dB. The speech distortions were peak clipping or center clipping, with clipping thresholds from 2% to 98% of the cumulative magnitude histogram. Subjects (4 male, 4 female) with normal hearing were seated in an anechoic chamber. Speech was reproduced by a small, high-fidelity loudspeaker located 2.4 m to the center-of-head and the inter-aural axis. Noise was reproduced by four-loudspeaker systems and processed to simulate a diffuse field at the ear in the horizontal plane. The revised STI was computed using the standardized test signal [IEC 60268-16 (2003)] and the speech signal. The SII was calculated using coherence to estimate the effects of distortion. Results will be discussed in terms of the ability of each objective metric to predict intelligibility and adjustments to the metrics to improve performance. [Work supported by NIOSH Grant R01OH008669.]

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