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The contribution of vowel production to the intelligibility and
accentedness of nonnative speech

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The present study investigated the extent to which the perception of accentedness and intelligibility in non-native speech depends on the specific acoustic realization of vowels produced by nonnative speakers. Twelve native speakers of Korean were recorded producing both word- and sentence-length English utterances. Acoustic analyses, including measures of vowel duration and formant frequencies, were conducted on tokens of individual English vowels identified from the word-length utterances. Vowel tokens were selected from a variety of phonetic contexts and were compared to productions of the same vowels produced in the same contexts by native English speakers. A separate set of native English-speaking listeners judged accentedness and intelligibility from the sentence-length utterances. The results showed that both the duration and spectral characteristics of Korean-accented vowels were related to overall sentence intelligibility and ratings of perceived accentedness. These findings suggest that the detailed acoustic realization of the temporal and spectral structure of non-native vowels contributes to global measures of perceived accentedness and overall intelligibility.