BUZZED /i/ PRODUCTION

ABSTRACT

MARIE BISSELL. An acoustic and articulatory study of a phonetically-distinct buzzed /i/ production among speakers in Raleigh, North Carolina. (Under the direction of Jeff Mielke)

The current study aims to examine the acoustic and articulatory characteristics of a buzzed /i/ sound that is perceived to have buzzing quality in American English speakers, which I label as “buzzed /i/.” This production has so far been observed in television personalities, sportscasters, and even linguistics professors. I listened to and selected five speakers from the Raleigh corpus (Dodsworth & Kohn 2012), two control with no buzzed /i/ and three with moderate rates of buzzed /i/. Importantly, buzzed /i/ is relatively rare both within speakers and within the population: only 11 out of over 300 speakers used buzzed /i/ at rates higher than 10%. The five speakers I selected had come in for a follow-up ultrasound study after their initial participation in the corpus. I extracted acoustic data from the ultrasound recordings to look at intraspeaker and cross-speaker differences between canonical /i/ and buzzed /i/. This analysis pointed to low F4 amplitude as a common characteristic both within and across speakers. Fant (1970) writes that F4 in /i/ productions is a tongue passage resonance, so a tighter constriction during buzzed /i/ would be consistent with weakened F4 amplitude as observed in these speakers’ spectrograms. Next, I extracted mid-sagittal ultrasound images at the midpoint of /i/, /u/, /u/, and /e/ in order to compare their articulatory characteristics. Speakers who produced buzzed /i/ did not show considerable gestural variation between their buzzed /i/ and canonical /i/ productions. This ultimately supports the notion that variation between canonical /i/ and buzzed /i/ may lie in tightness of constriction rather than tongue root or tongue body shape.