Creaky Voice – a change in progress in English?

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It has been noted widely that younger English speakers frequently use creaky voice in their speech (Wolk et al., 2012; Yuasa, 2010). It will be proposed in this paper that there is currently a change in progress for the manifestation of neutral declaratives. While the prosodic pattern of neutral declarative sentences in English has typically been described as a falling tone at the end (c.f. Pierrehumbert, 1980), it appears that creaky phonation is replacing F0, demonstrated here by acoustically different patterns among two generations of American speakers. The presence of narrow focus, however, seems to block this kind of phonation in younger speakers.

Methodology: Two generations of American English speakers (10 speakers ~ age 20 and 7 speakers ~ age 50) were tested on the production of two different types of structures, differing prosodically and corresponding with particular pragmatic meanings. Twenty sentences (ten from each category) were elicited in a non-focused condition (i.e. neutral) and focused condition (where a particular word attracted focus). Subjects read a contextual paragraph before recording the sentences in the focused condition and had no context before recording the sentences in the non-focused condition.

Analysis: The sonorant portion of the stressed rime in the final word of each sentence (a location of pitch accent or boundary tone in the focused condition) was compared in terms of jitter (rap) and spectral properties (specifically H1-A3) using Praat. Jitter and spectral tilt have been used previously to quantify creaky phonation (cf. Javkin & Maddieson 1985, Kirk et al. 1993 for jitter; Stevens and Hanson 1995, Keating & Esposito 2006 for H1-A3).

Results: Preliminary results show divergent results for the two groups, in terms of the degree of creaky phonation present in the data. Overall, jitter level is much higher for the younger speakers than the older speakers: 2.53% vs. 1.18% in neutral declarative sentences. Similarly, H1-A3 procured much higher (positive) values for the older speakers than the younger speakers. For younger speakers, there is a high degree of jitter in the final word of sentences with no focus, but less in the final word of sentences where a pitch accent or a boundary tone is predicted (mean: 2.53% vs. .87%). Moreover, H1-A3 has much higher values for the focused than the non-focused condition. The same pattern is observed for the older speakers, however at a much reduced rate (mean jitter: 1.18% vs. .78%). In contrast to neutral sentences, when focus is introduced on a particular word in a sentence, the associated increase in prominence tends to restore F0 and thus diminish the creaky voice. It is anticipated that the remaining results will confirm these patterns.

In conclusion, it appears that there is a divide in the speech of the two generations outlined above, specifically with regards to the degree of creaky voice in neutral declaratives. The results from this study suggest that while creaky voice remains a minimal correlate signaling neutral declaratives among older speakers of English, it may be emerging as a crucial correlate among younger speakers.

References:

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