

Pre-voicing variability in Polish and Polish English – evidence for a new laryngeal realism

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Most of the debate inspired by Laryngeal Realism (LR; Honeybone 2005; Beckman et al. 2013) has concerned the question of whether the feature [voice] is binary, or should be replaced by [spread glottis] ([sg]) in ‘aspiration’ languages. In this paper, we present evidence from Polish and Polish-accented English that [voice] should be eliminated even in ‘voice’ languages. The data concern the status of pre-voicing, which according to LR directly encodes the feature [voice]. Our results from production and perception studies are summarized below.

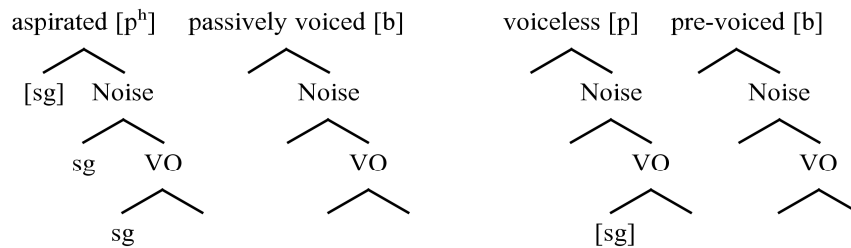
1. In an L1 Polish discrimination task, listeners were highly accurate in perceiving the laryngeal contrast even when pre-voicing was absent from the stimuli.
2. In an L1 Polish production task, about 15% of Polish /b d g/ items were realized without pre-voicing
3. In an L2 English production task, B1-level Polish learners produced target-like lenis tokens without pre-voicing in only about 50% of the items, while target-like fortis (>50ms VOT) items were produced more successfully, nearly 70% of the time.

Our interpretation of the L1 results (1 and 2) is that pre-voicing, when it appears, is merely a phonetic enhancement effect to distinguish /bdg/ from unaspirated /ptk/. Other studies have also noted that pre-voicing is not always obligatory in ‘voice’ languages (van Alphen & Smits 2004), which tend to promote the perceptual weight of f0 (Coetzee et al. 2014; Dmitreva et al. 2015).

The L2 results (3) may be considered against the backdrop of Flege’s (1995) Speech Learning Model, according to which *equivalence classification* hinders successful acquisition of an L2 phonetic category that is similar to L1, while ‘new’ sounds are acquired more successfully. Our findings (as well as those of Zajac 2015) suggest equivalence classification between pre-voiced Polish and unvoiced English /bdg/, but not between short-lag and aspirated /ptk/. Aspiration therefore represents a new category that is acquired more successfully, while L1 interference persists in the failure to suppress Polish style pre-voicing. These findings go against the predictions of Laryngeal Realism, in which both fortis and lenis English stops should comprise new categories for Polish learners.

The question that remains is how phonological theory can accommodate this interpretation while still encoding the VOT categories associated with LR. In the Onset Prominence framework (OP; Schwartz 2016, submitted), aspiration vs. voice systems are represented as in (1). The only melodic feature is [sg] or [fortis] in both systems. Aspiration results when [sg] is assigned at the highest level of structure, Closure, and trickles down to occupy the Noise node. Pre-voiced and unvoiced /bdg/ are phonologically unspecified in both systems. When pre-voicing appears, it is simply an element of a voiced carrier signal as envisioned in Traunmüller’s (1994) Modulation Theory, rather than the realization of a phonological feature.

(1) Aspiration (left) vs. voice systems in the Onset Prominence framework



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