Online perception of coda glottalization in American English
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I. Background

Coda glottalization: /t/ [ʔt], /d/ [ʔd], /p/ [ʔp]

Two enhancement accounts for why glottalization occurs:

1. Glottalization is used to enhance [-voice] feature of voiceless stops [1, 2].
   - Are listeners faster in recognizing glottalized voiceless stops?
   - Both accounts assume that glottalization should be beneficial to listeners.

II. Stimuli

- Recorded by female Californian English speaker
- Original vowels extracted and resynthesized - spliced back into original C, C frames (Klatt Synthesizer in Praat)
- Only difference is in glottalization on the vowel!

III. Discussion

- Glottalization does not aid in recognizing words with voiceless coda stops.
  - But, glottalization inhibits recognition of words with voiced coda stops.
  - Neither does it aid in recognizing words with /t/ vs. /p/.

- Though listeners are aware that glottalization is not associated with [+voice], do not use it to recognize /t/ or [-voice] codas faster.

- Here and in spontaneous speech, glottalization is strongest at end of vowel:
- Potential benefits to word recognition might be too late to be used reliably.

- No strong evidence for enhancement accounts

Selected References


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Eye-tracking study (following [5, 6]):
- 60 AmE listeners (UCLA Psych. Pool)
- All target words were paired monosyllabic CVC English words – minimal pairs (in orthography as well).

Method

1. Look at the words on the screen... (3 s)
2. Now look at the cross... (500 ms)
3. Now look at the word TARGET... (1500 ms)

Q: Does glottalization enhance /t/?

Q: Does glottalization enhance voiceless stops?

For voiced stops – poorer recognition when presented with glottalized tokens

Glottalized words recognized more slowly overall

Overall poorer recognition of /p/ words

Glottalized /t/ words recognized marginally faster than non-glottalized /t/

Glottalization does not facilitate recognition of voiceless stops or /t/ words

Vowels extracted and presented with silence of 600 ms

Glottalization does not aid in recognizing words with voiceless coda stops.

But, glottalization inhibits recognition of words with voiced coda stops.

Here and in spontaneous speech, glottalization is strongest at end of vowel:

Potential benefits to word recognition might be too late to be used reliably.

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