Experimental evidence for perceptual hypercorrection in American r-dissimilation

What is American r/-dissimilation?
Americans tend to drop an /r/ in words containing two /r/s
su(r)prise be(r)serk cate(r)pillar pa(r)/ticular

What causes dissimilation?

Traditional views
Repeated articulations are difficult to produce
Repeated articulations are difficult to mentally serialize

Perceptual hypercorrection theory
Ohala 1993: Listeners perceptually hypercorrect for coarticulation
Sounds like /r/ coarticulate over several syllables (Heid & Hawkins 2000), creating ambiguity as to how many /r/s are present

What is our goal?
We test whether American /r/-dropping can be produced in a perceptual task, through manipulating presence / absence of a later 'trigger /r/' and intervening /r/-coarticulation

Predictions and findings
We predicted that a later /r/ should perceptually mask an earlier /r/, especially when there is /r/-coarticulation on intervening segments.

Stimuli
34 sets of 4 nonce words, spliced from multiple natural productions
Red shading = presence of r-coarticulation
Question: does later r, and/or r-coarticulation, affect perception of first r?

Participants and procedure
60 English speakers typed nonce words (4 conditions above counterbalanced across 4 lists), heard in frame sentences accompanied with pictures.

Typed responses
pubnisher pumbernicher Pummenicher Pummeniture pummenmeture pummenmetscher pummenmetscher
pumnicher pominiture parmeniture parmenmeture pummenmeture pummenmetscher Pummenicher

Responses coded for dropping of target /r/

Discussion
• Results are compatible with the perceptual hypercorrection theory: listeners were more likely to miss an /r/ when another /r/ was present.
• Results support the importance of /r/-coarticulation on neighboring syllables for perception of American /r/.
• However, presence of /r/-coarticulation does not affect dissimilation in the way we expected. Perhaps what’s important is that listeners expect it to be present: when actual coarticulation is weak, listeners are more likely to interpret the first /r/ as the expected coarticulation.

References

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