Main Points
- The language of a speaker determines the overall slow-rate glottal regime and is used to interpret intonation.
- Increasing rate in a repetitious speech task induces reorganization of glottal regimes.
- Speakers shift to a regime in which a glottal abdication gesture is aligned with stop release.
- Shifts involve not only repositioning of gestures, but also deletion and addition of glottal closures.
- Combined results suggest both language-specific structures, and language general tendencies.

Background
Stetson's Motor Phonetics
From Stetson (1945. p.78):
• Universal assumption is articulately determined. Speakers in production experiments can be induced to shift from one item in the inventory to another.

Rate-induced Resyllabification
VC syllables repeated at fast rates are perceived as CVs (Stetson, 1945: 10, Tuller & Kelso, 1991: de Jong et al. 2001a).

Stability:
25%
75%
Some modes are more stable than others, fast rate movements are cross-connected and reciprocal.

Phonetics
From Stetson (1945. p.78):
• Shifts involve not only rephasing of gestures, but also gesture is aligned with stop release.

Summary Discussion
ENGLISH
- Slow-rate glottal regimes exhibit allophonic options, including glottalization of voiced consonants.
- Each CV form has prosodic syllabic initial glottal marker.
- Rate increases change glottal regimes from various slow-rate configurations toward a glottal abdication regime synchronized with the release of the stop.
- Previous rephasing results are but one example of this more general reorganization.
- Part of reorganization is grouping syllables together without initial glottal marker.
- Reorganization also can add devoicing gestures with CV-time timing.

ARABIC
- While each VC form may have a prosodic onset, each CV form also tends to have a prosodic coda. Both CV and VC actually tend to the VC.
- Reflects tendency in Arabic colloquial phonology toward filling syllabic templates (Brodowski, 1992; Davis & Zawaydeh, 1997).
- Rate increases tend to move glottal regimes toward same pattern as English speaker.
- Rephrasing effects are larger, since they also involve post-voice.
- Arabic speaker tends to resist loss of initial glottal closures.
- Perhaps this resistance reflects use of glottal stop in Arabic lexical contrast as a communal marker. Glottal stop is proper part of the syllable being repeated, part of higher level prosodic domain.

GENERAL
- Linguistic function determines behavior in production experiments. Actions are typical of native component composition is determined by prosodic patterning typical of native system.
- Speakers of both languages tend to implement a glottal opening synchronized with the stop release in fast speech. Rate has a common effect for both speakers; suggesting that this common behavior is driven by production factors.

Motor Phonetics Updated
- Not all gestural combinations and compositions are similarly equal. Motorically preferred phonetic actions are modes in speech behavior and can be induced in speech experiments.
- The common appearance of these speech modes in numerous languages would suggest that motor factors act as background pressures in the historical determinism of linguistic systems.
- Motor structures, however, may get integrated into different languages for different linguistic functions. These functions, in turn, determine what speakers will do in speech experiments.

References

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