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Towards a reassessment of the gemination of [ɹ] in British and American English?

G. Dabouïs1, O. Glaini2, S. Navarro2
1Université Clermonto-Auvergne, CNRS, UMR 6320 Clermont-Ferrand, France
2Université Jean Moulin-Lyon 3, UMR 5507, CEREC, F-69006

ABSTRACT

Gemination may be seen as a process of phonetic doubling or more appropriately for English – of phonetic length (Kaye 2005). Previous studies have shown that English does have consonantal gemination in semantically compositional prefixed words, although it may vary depending on speech rate, the productivity of the prefix, the presence of stress on the following syllable and the nature of the following segments (Bauer 2005; Crottenden 2014; 248; Ben Hedi & Pieg 2017; Kaye 2005; Oh & Redford 2012; Videau 2013).

Aims

Check whether or not the difference between British English and American English can be confirmed using speech data.

If attested, evaluate whether the gemination of [ɹ] depends on the same variables as those found for other consonants.

Try to determine whether or not we can assume that speakers have two underlying /r/ variants, even if these are not systematically realised.

Methodology

The data was analysed spectrographically in Praat (Boersma & Weenink) in order to perform two measurements: the length of [ɹ] and the occurrence of log-transformed (as log (x+1)) frequencies taken from SUBTLEX-UK and US and COCA.

In both studies, the following variables were coded:

PP: Phonetic length of [ɹ] in seconds

SpeechRate: Ratio of the number of segments in the word and its length in seconds

LowFrequencies: log transformed (as log (x+1)) frequencies taken from SUBTLEX-UK and US and COCA

RelativeFrequency: ratio of the frequency of the base and that of the derivative

SecondSyllableStressed: Stressed/Unstressed

Gender: Male Female

Semantic: Transparent/Opaque

The two varieties of English are analysed separately.

PRELIMINARY RESULTS

Overall results

US vs. UK

US English has longer [ɹ] than UK English

This in variety, [ɹ] is longer in semantically transparent items than in opaque ones (6)

Can we say that US English geminates and UK English does not?

Outside of semantic transparency, the same variables are significant predictors of [ɹ] length in both varieties

Geminacy is only relevant in US English

This could be due to the phonetic stress of this variety.

Follow-up

Possible study of [ɹ] in words with no morphological structure (e.g. ferry, arrow)

Similar syllabification study with other cases of CC

Inclusion of the duration of [ɹ] to determine whether the length of underlying /r/ might lead to longer surface [ɹ]

The analysis of the data needs to be refined but so far our results confirm the existence of a difference between British English and American English.

In both varieties, we find effects of absolute frequency, stress in the second syllable and gender.

The effects of semantic transparency support the segmestification hypothesis (Hay 2001). In previous studies, this hypothesis has not been systematically supported (see e.g. Pieg & Ben Hedia 2018)