

### Frequency and social effects in the lenition of coda fricative in Brazilian Portuguese

This presentation addresses the competing effects of word frequency and social group in the directionality of sound change in the variable use of fricative coda (s) in Brazilian Portuguese as in  $me[\zeta]mu$ ,  $me[z]mo$ ,  $me[h]mo$  e  $me\emptyset mo$  ‘mesmo’ *same*, in the speech community of Rio de Janeiro, Brazil, specifically comparing data from 8 speakers from EJLA Sample and 8 speakers from Censo 2000 Sample. The former is formed by socially excluded adolescents without regular schooling from carioca slums and the later are middle-class speaker with Elementary and High school. Evidence is provided for the competing effect of structural conditioning, regarding following context, word frequency and social group and also that there are different patterns of variation being developed in the speech community. According to Bybee (2002, 2010), the dual view of the unit of a sound change, whether the lexical item or the segment, is rooted in a view of phonology that states phonemic underlying representations based on discrete segments (phonemes). Bybee (2002, 2010) also suggests that the resolution of this dichotomy, also known as neogrammarian controversy (LABOV, 1981, 1994), relies on the propositions of an exemplar model of phonology which provides a unifying treatment for the simultaneous effect of both phonetic conditioning and the gradual implementation of sound change in the lexicon, since actual instances of words, as they are produced and perceived by the speaker/hearer, are part of the representations of the wordforms in the lexicon. Logistic Regression using R-brul (JOHNSON 2014) found significant fixed effects of following context and morphological status (morpheme vs. non-morpheme), in both samples. For EJLA Sample data, it was also found significant random effects for speaker and word. In relation to internal constraints, lenition of the fricative to a back articulation – [x ɣ h ɦ] – is favoured when the coda (s) is followed by voiced consonants (Table 1), and when it has no morphological status. The level of lenition depends on the individual speaker, although these 8 lower-class speakers from EJLA Sample (30%) used more lenition than the 8 speakers from Censo 2000 (5%) and other social groups in the community as well (SCHERRE and MACEDO 2000; CALLOU and BRANDÃO 2009). As lenition depended on the identity of the word, a continuous numeric predictor was added, representing the frequency of the words in the EJLA corpus. An Rbrul run retained the significant effects observed above and also included the effect of word frequency: the lenited back fricative variant occurs more often in frequent words, as might be expected (BYBEE 2010). However, the significant random effect of word remains, prompting the search for other relevant word-level predictors while leaving open the possibility that lexical items may individually favour or disfavour the lenition process. Chart 1 also presents evidence that, besides word frequency, social constraint plays a role in the implementation of the back variant. Although the highest frequent words favors the velar/glottal variant for EJLA data, the same words present the opposite pattern in Censo Sample, with the prevalence of the post-alveolar fricative in coda. We argue that, although the effect of following context is similar in the data from both samples, the speakers from each sample present different representational patterns for some words (for instance, *mesmo*, *nós*, *às vezes*), according to the Exemplar Model hypothesis, probably due to the social evaluation of the back fricative (MELO 2017). These results provide further evidence of token frequency as a mechanism of change implementation but also that social values related to the variants can play an important role in the directionality of language change, consisting a key aspect to be considered in the issues related to the actuation problem (WEINREICH, LABOV, HERZOG 1968).

Table1. Effect of following context in the variable use of glottal in coda in BP

|                   | CENSO 2000 |      |       | EJLA     |      |       |
|-------------------|------------|------|-------|----------|------|-------|
|                   | Apl/N      | %    | peso  | Apl/N    | %    | peso  |
| consoante soante  | 157/735    | 21,4 | 0,961 | 413/472  | 87,5 | 0,988 |
| obstruinte sonora | 71/781     | 9,1  | 0,899 | 271/336  | 83,3 | 0,965 |
| obstruinte surda  | 12/2160    | 0,6  | 0,290 | 153/1245 | 11,7 | 0,381 |
| vogal             | 1/972      | 0,1  | 0,045 | 5/339    | 1,5  | 0,029 |
| pausa             | 2/561      | 0,4  | 0,191 | 5/300    | 1,3  | 0,023 |

Chart 1. Lexical conditioning of the glottal in coda in BP

| ITENS    | Meaning          | CENSO 2000 |      | EJLA    |       |
|----------|------------------|------------|------|---------|-------|
|          |                  | Apl/N      | %    | Apl/N   | %     |
| às vezes | sometimes        | 0/141      | 0    | 81/85   | 95,3  |
| mesmo    | same             | 41/279     | 14,7 | 113/127 | 89    |
| desde    | since            | 3/23       | 13   | 10/12   | 83,0  |
| vários   | many             | 0/12       | 0    | 17/26   | 65    |
| nós      | we               | 7/34       | 20,6 | 137/235 | 58,59 |
| dois     | two              | 2/56       | 3    | 37/74   | 50    |
| mais     | more             | 44/332     | 13,3 | 52/108  | 48,14 |
| mas      | but              | 32/461     | 6,9  | 65/144  | 45,13 |
| as       | as               | 6/104      | 4    | 20/58   | 34,5  |
| duas     | two (fem.)       | 2/40       | 5    | 32      | 31    |
| eles     | they             | 8/234      | 3,4  | 23/124  | 21,30 |
| os       | the (det. masc.) | 5/167      | 3    | 263     | 21    |
| existe   | exist            | 0/26       | 0    | 0/10    | 0     |

References

BYBEE, Joan. Word frequency and context of use in the lexical diffusion of phonetically conditioned sound change. *Language Variation and Change*, 14 , pp 261-290, 2002.

\_\_\_\_\_. *Language, usage and cognition*. Cambridge: Cambridge University Press, 2010.

CALLOU, D. M. I.; BRANDÃO, S. F. “Sobre o /S/ em coda silábica no Rio de Janeiro: falas culta e popular”. In: Salgado, Ana Claudia Peters; Barretto, Mônica M. Guimarães Savedra. (Org.). *Sociolinguística no Brasil: uma contribuição dos estudos sobre línguas em/de contato: homenagem ao Prof. Jürgen Heye*. Rio de Janeiro: 7 Letras, p. 27-34, 2009.

Johnson, D. E. (2014) *Progress in regression: Whysociolinguistic data calls for mixed-effects models*. Self published manuscript. < [http://www.danielezrajohnson.com/johnson\\_2014.pdf](http://www.danielezrajohnson.com/johnson_2014.pdf) >

LABOV, William . “Resolving the neogrammarian controversy”. In *Language*, 57: 267-308, 1981.

\_\_\_\_\_. *Principles of linguistic change: Internal factors*. Oxford: Blackwell, 1994.

MELO, M. A. S. L. *Direcionalidade da mudança sonora: o papel do item lexical e da avaliação social*. Tese (Doutorado em Linguística) – UFRJ, Faculdade de Letras, Rio de Janeiro, 2017.

SCHERRE, Maria Marta Pereira e MACEDO, A. V. T. (2000) Restrições fonético-fonológicas e lexicais: o -S pós-vocálico no Rio de Janeiro. In: Maria Cecília Mollica; Mário Eduardo Martelotta (org.). *Análises linguísticas: a contribuição de Alzira Macedo*. Rio de Janeiro: Serviço de Publicações - FL/UFRJ, p. 52-64.

WEINREICH, W., LABOV, W., HERZOG, M. *Empirical Foundations of a Theory of Language Change*. In: Lehmann, W. P.; Malkiel, Y. (eds) *Directions for Historical Linguistics*. Austin: University of Texas, 1968, p.97-195.