ABSTRACT: A number of recent works has shown that linguistic representations incorporate redundant information which plays an important role in linguistic systems. Works on experimental phonetics and along the lines of Laboratory Phonology indicate the gradual nature of phonetic representations (Browman & Goldstein (1992), Zsiga (1995), Albano (2001), Bybee (2001, 2002), Pierrehumbert (2001)). This paper follows this line of research by investigating plural loss in Brazilian Portuguese. We will investigate lenition in Brazilian Portuguese plural forms that end in a sibilant, as in mãos ‘month’ whose plural form is meses ‘months’. This paper offers evidence for the gradual implementation of phonetic changes by showing that the loss of a morphological category (plural) leaves traces in the continuum of speech in the form of compensatory lengthening.

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