

**Phonetic, phonological, and social forces as filters:
Evidence from *Gorgia Toscana***

This study brings quantitative analysis to data from Florentine Italian to describe a lenition process known as *Gorgia Toscana*, assessing the roles of physiological, perceptual, abstract cognitive, and social factors in the process. Previous studies have described *Gorgia Toscana*'s historic evolution (Izzo 1972), sociolinguistic variation (Giannelli and Savoia 1978-80; Cravens 2000), articulatory motivations (Kirchner 1998, 2001); and acoustic properties (Marotta 2001; Sorianello 2001). None of these and other treatments to date, however, offers an integrative explanation of certain observations: the gradient nature of Florentine lenition, the greater susceptibility of velars to the process, the historic spread of *Gorgia Toscana* from velars to non-velars, and the variation among speakers.

In the present study, data from six native speakers of Florentine Italian were analyzed acoustically for consonant duration, intensity, periodicity, and burst absence. Results indicate that *Gorgia Toscana* produces gradient and variable output, with certain patterns occurring in the variation. The observations that emerge from the data cannot all be accounted for if *Gorgia Toscana* is characterized as a purely phonetic, phonological, or socially-driven process of sound change. Rather, different aspects of the process can and should be attributed to different motivators: gradience and velar-preference to articulator movements; resistance of non-velar lenition to perceptual constraints; targeting of a complete natural class and categorical weakening to abstract featural representations; and intersubject variation in velar lenition to external social factors.

Gorgia Toscana effects thus seem best understood by referring to various forces that act to either encourage or inhibit weakening. Applying Hume and Johnson's (2001) filter model to lenition data for /k/ and /p/ within the existing sound system of Italian, we can generalize over the observed patterns in *Gorgia Toscana* lenition in a way that is descriptively and explanatorily more adequate than previous accounts of the process.

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