

VELAR PALATALIZATION: COARTICULATION, PERCEPTION, AND SOUND CHANGE

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Susan Guignard Guion, Ph.D.

The University of Texas at Austin, 1996

Supervisor: Nicola Bessell

This dissertation investigates the sound change of velar palatalization (e.g., $k > tʃ$ / __ [front vowel]) for insights into the nature of sound change. From the premise that sound change is phonetically conditioned, the hypothesis is constructed that velar palatalization is the result of a perceptual reanalysis of faster, reduced speech. This hypothesis makes several testable predictions that are pursued in experimentally.

By looking to the laboratory for explanation in sound change, I follow a line of research most notably attributed to Ohala (1971, 1974, 1981, 1989, 1993). By assuming a phonetic basis for sound change, and assuming that the phonetic variation found in speech production today parallels variation in the past, investigation into the origins of sound change can be undertaken on any living language.

I investigate the prediction that fronted velars are acoustically similar to coronals, especially in faster speech. The focus is on one of the most common

outcomes of the sound change, namely the palatoalveolar affricate. I investigate the spectral properties of velars and palatoalveolars and look for similarities between them. The locus equation methodology is also used to compare the F2 transitions of velars and palatoalveolars. In this study, two speech styles (citation and faster) are used to determine whether or not the faster speech tokens of the velars are more like palatoalveolars than the citation speech tokens. I also report the results of perception experiments that investigate the prediction that velars will be heard as palatoalveolars before front vowels. The results of the experimental work support the predictions.

A theory of sound change is proposed which expands the Lindblom *et al.* (1995) model of sound change to allow a role for phonetic categories. The addition of phonetic categories has advantages over a word-based model since it predicts the regularity of sound change and allows investigation into adaptive forces which act on systems as a whole such as auditory enhancement (Diehl and Kluender 1989, Diehl *et al.* 1990) and adaptive dispersion (Lindblom 1986).