

## Abstract

This paper documents and analyses final obstruent devoicing in Camuno paying specific attention to factors contributing to the evolution of this sound pattern. Camuno is a language of Italy spoken in Valcamonica, in the north-east of Lombardy (Cresci 2010). The language lacks a systematic writing system and is severely endangered. It is spoken in an area of historical contact between Romance and Germanic languages, which use different acoustic correlates to cue voicing contrasts for obstruents. Camuno exhibits final obstruent devoicing in a number of morphological alternations, including: verb paradigms (e.g. [kri'di] 'to believe' [me'krɛde] 'I believe' vs. [ly l'krɛt] 'he believes'); masculine/feminine paradigms (e.g. ['horga] 'mouse, f.' vs. [ho'rɛk] 'mouse, m.'; ['gerba] 'unripe, f.' vs. ['gɛrp] 'unripe, m.'; [he'rada] 'closed, f.' vs. [he'rat] 'closed, m.');

and in augmentative/diminutive pairs (e.g. ['ʃot] 'nail', [ʃu'di] 'small nail', and [ʃu'du] 'big nail'). The unique status of Camuno allows us to address the following research questions: (1) What acoustic correlates cue voicing in this language, and do these correlates reflect a contact zone between Romance and Germanic languages? (2) Is final obstruent devoicing a sound pattern of the language? (3) What are the phonetic correlates of final obstruent devoicing in a spoken language uninfluenced by a written system? Does Camuno show complete or partial devoicing? (4) What is the most appropriate phonological characterization of devoicing in this Italic language? (5) How did this sound pattern emerge and develop? This is the first study that investigates the phonetic of devoicing in this region of Italy, and substantiates impressionistic observations with instrumental analysis. The data that inform this study were collected with three tasks. The Repetition Task provided samples to identify the phonetic parameters that cue voicing contrasts; the Production Task samples of final obstruents to measure; the Acceptability Judgment Task complemented and reinforced the Production Task. The data were subjected to Wilcoxon Signed Ranks Test. Camuno cues voicing contrasts for obstruents by means of acoustic correlates that are in between true 'voicing' and 'aspirating' languages, thus reflecting a contact zone between Romance and Germanic languages. Camuno voiced stops may not be fully voiced throughout the closure and they have some aspiration; voiceless stops exhibit longer aspiration duration than usually attested in voicing languages. Final obstruent devoicing is a sound pattern of the language. Phonetically, underlying voiced stops in final position are different from underlying voiced stops in initial and medial positions; they have less amount of vocal fold vibration and longer aspiration duration. Underlying voiceless stops in final position are also different from underlying voiceless stops in initial and medial positions; like underlying voiced stops they have less amount of vocal fold vibration and longer aspiration duration. They are different from either voiced or voiceless series in the language. Neutralization between word-final underlying voiced and voiceless stops is almost complete. Phonologically, the contrast in the Camuno lexicon between /p, t, k/ and /b, d, g/ should be characterized in terms of the feature [ $\pm$ voiced]. In word-final position a [spread glottis] feature is associated with final stops and results in delinking of [+voiced] if it is present. The emergence of the sound pattern in the language is the result of word-final vowel loss (other than /a/), a sound change that has characterized a number of Italic languages spoken in the north-west of Italy (Giannelli & Cravens 1997). Evolutionary Phonology (Blevins 2004) provides a model that explains the emergence and development of the pattern. Within this model, the recurrent pattern and high frequency of final devoicing is attributed to multiple phonetic sources. One source is a laryngeal spreading gesture in phrase-final position. The association of laryngeal spreading gesture with vowels can yield final vowel devoicing and loss (Myers 2007); association of a glottal spreading gesture with final obstruents is expected to result in complete or partial final devoicing. Final devoicing need not result in full neutralization, nor even in a category which is identical to preexisting categories. The phonetic changes are gradient, and so there is an expected trajectory that is not predicted by a purely phonological approach. Incomplete neutralization and the emergence of a third stop category word-finally could be related to the non-literary status of Camuno. Perhaps, with no forced choice determined by spelling, non-binary contrasts in voicing categories reflect a natural stage in the evolution of final devoicing.