

Animacy influences segmental phonology: The velar-sibilant alternation in BCMS

Marko Simonović

University of Graz marko.simonovic@uni-graz.at

BCMS sibilisation, whereby velars /k, g, x/ alternate with sibilants /ts, z, s/ in front of an /i/-initial affix is a highly morphologised process whose application rates vary from context to context. In Table 1, four morphemes which have the segmental content /i/ are shown. The imperative morpheme unexceptionally triggers the alternation, the NOM.PL morpheme triggers the alternation productively but exceptions are well attested. On the other hand, the DAT/LOC.SG morpheme triggers the alternation in some words, fails to do so in others, and triggers it optionally in yet other words. Finally, the GEN.PL morpheme never triggers the alternation.

Alternation	Context	Example
Categorical	Imperative	/leg-i/ → lezi ‘lie down’
High	Nominative plural of nouns	/kirurg-i/ → kirurzi ‘surgeons’ (but exceptionally detʃki ‘guys’)
Medium	Dative/locative singular of nouns	/bajk-i/ → bajtsi ‘fairy tale(dat/loc)’ /alg-i/ → algi ‘alga(dat/loc)’ /fresk-i/ → freski/frestsi ‘fresco(dat/loc)’
Zero	Genitive plural of nouns	/bajk-i/ → bajki ‘fairy tales(gen)’ /alg-i/ → algi ‘algae(gen)’

The main focus of this contribution is on the DAT/LOC.SG ending /i/ and the main goal is establishing the factors which determine the occurrence of the alternation. Traditional descriptions (e.g., Težak 1986) list various factors, very few of which are deterministic. One deterministic factor is the avoidance of total identity with the preceding consonant, so that stems ending in *-tsk-*, *-zg-* and *-sh-* never alternate (first described as ‘self-evident’ in Maretić 1963, 169). Possibly more surprisingly, various deterministic factors are related to animacy. One is that names of persons and animals never alternate (e.g. in Silić & Pranjković 2005: 161). Silić & Pranjković (2005: 161) further state that nouns that denote inhabitants and nationals never undergo the alternation. However, the link between animacy and the absence of alternation cannot be direct because there are quite common counterexamples. E.g., for *kteerk-a* ‘daughter’, both *kteerk-i* and *kteerts-i* are attested, whereas for *majk-a* ‘mother’ only *majts-i* is widely accepted. Finally, while no grammars mention this factor, it appears plausible that the presence of a non-alternating GEN.PL ending /-i/ may influence the (non-)alternation in DAT/LOC.SG.

In order to establish the influence of phonotactic factors, animacy and the presence of a non-alternating /i/ elsewhere in the paradigm on the alternation ratios, I conducted a corpus study targeting nouns with velar-final stems. Since the GEN.PL /i/ is an option only in cases where the stem ends in a consonant cluster, I restricted my sample to such nouns.

In hrWaC (Ljubešić & Klubička 2014), I first conducted a CQL search for lemmas ending in *-CGa*, where C is any consonant and G is any velar. The results were ranked by frequency and the 110 most frequent nouns were copied to a separate table and annotated for animacy and several phonological variables. For these nouns, a search for DAT/LOC.SG and GEN.PL was

conducted. Specifically, CQLs were used in which the word in question is preceded by two congruent adjectival words (as this was found to yield relatively clean results). For instance, the DAT/LOC.SG forms for *fresk-a* ‘fresco’ were searched using the query [word = ".*oj"] [word = ".*oj"] [word = "fres(c|k)i"] and the GEN.PL forms of the same noun were searched using the CQL [word = ".*ih"] [word = ".*ih"] [word = "fres(ki|aka|ka)"]. The search results were manually cleaned and the alternation ratio was calculated for each noun. The nouns for which one of the searches yielded an empty result were removed and supplanted by new words from the lemma frequency ranking.

Among the 110 most frequent nouns, there was an extremely uneven distribution of the final velars. /x/ was unattested, /g/ was attested in only 3 items and /k/ was attested in 107 items. All three /g/-final nouns (*manga*, *alga*, *felga* ‘tire rim’) had an alternation ratio of 0 in DAT/LOC.SG. These nouns were removed from the sample and supplanted by the next 3, which had a final /k/. The mean DAT/LOC.SG alternation ratio for the 110 nouns was 0.45. First, correlation coefficients for the DAT/LOC.SG alternation ratios and all the phonological factors, animacy and GEN.PL /-i/ were calculated. Among the phonological factors, the binary variable STOP_AFR (1 for stops and affricates, 0 for all other consonants) had a high correlation coefficient with the alternation ratio ($r=-0.51$, $p<.0005$), animacy has a comparable value ($r=-0.5$, $p<.0005$), whereas GEN.PL /-i/ ratios were uncorrelated with DAT/LOC.SG alternation ratios ($r=-0.05$). A linear model, where STOP_AFR and ANIMACY served as predictor variables and the alternation ratio was entered as outcome, showed a significant negative effect of both predictor variables, as well as of their interaction. The relative importance of the 2 predictors and their interaction was calculated. This model explained 62% of the observed variance, with STOP_AFR accounting for 28% of the variance, ANIMACY for 27%, and their interaction explaining for 7% .

Further insight into the data shows that animates as a whole show an extremely low alternation ratio (mean=0.08), whereas inanimates show no clear tendency as a group (mean=0.58). Moreover, while inanimates have a rather continuous distribution of alternation ratios, out of 28 animates, only 5 nouns are ever attested with alternation, and only 2 have alternation ratios above 0.2: *majka* ‘mother’ and *djevojka* ‘girl(friend)’, both with alternation ratios above 0.99. The fact that both nouns can denote roles is part of a broader tendency. I present data from an ongoing study on -VGa nouns (based on the Serbian corpus srWaC), showing that in this dataset as well nouns denoting (family) roles are among the few animates that can undergo the velar-sibilant alternation (e.g., *supruga* ‘wife’ and *unuka* ‘granddaughter’ both undergoing the alternation virtually categorically).

Animacy is widely known to influence the exponence ACC.SG in the main ‘masculine’ declension in BCMS, leading to ‘minimal pairs’ such as, e.g., *tip-a* ‘guy-ACC.SG’ vs. *tip* ‘type-ACC.SG’) The influence of animacy on BCMS tonal patterns has also been discussed in the literature, especially for the DAT/LOC.SG ending *-u*, that seems to realise an underlying H only in inanimate monosyllables, leading to minimal pairs such as *tīip-u* ‘guy-DAT/LOC.SG’ vs. *tīip-ú* ‘guy-DAT/LOC.SG’ (see Martinović 2012 a recent quantitative analysis). The wholesale influence of animacy on the application of segmental phonological alternations is a novel finding, which can be added to the repertoire of animacy effects in BCMS.

In a preliminary discussion of a formal account of the findings, I consider various ingredients, involving animacy scales and special Faithfulness constraints, while also seeking a unified account of the two phonological effects of animacy illustrated above. I argue that animates have an extra projection which restricts the phonological interactions between the base and the DAT/LOC.SG endings.

References

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