

## Velar Palatalization in Modern Italian inflectional morphology

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**Main Claim.** I argue that velar palatalization, i.e. the alternation between velar stops and affricates in root final position (hence K~Tʃ), is a synchronically productive and unified process in Modern Italian (contra Celata & Bertinetto 2005, Krämer 2016, a.o.). Misapplication is derived in an OT framework with Output-Output correspondence (Benua 1997 a.o.). Building on previous proposals (Giavazzi 2010, Steddy 2015) I present an analysis that encompasses both nominal/adjectival and verbal inflectional paradigms: I show that the two systems can be unified with a unique ranking despite their superficial dissimilarity. The synchronic process I describe here has a more restricted distribution and is less transparent than the one that characterizes the transition from Latin to Italian. The latter occurred across the board, as a rule like KE→TʃE: every velar stop became an affricate before a front vocoid (in constraint-terms: \*KE >> IO Id [str]). In the analysis I present, \*KE is retained as the only markedness constraint that determines the synchronic phenomenon, and opacity is caused by Base-Derivative Identity constraints. Judgments are taken from the Sabatini-Coletti dictionary (consultable at [[https://dizionari.corriere.it/dizionario\\_italiano/index.shtml](https://dizionari.corriere.it/dizionario_italiano/index.shtml)]). **Nouns and adjectives.** As Giavazzi (2008, 2010) points out, palatalization in nouns and adjectives is only triggered by [+high,+front] vowels (the Height Effect) and is stress-conditioned: palatalization is blocked if the stress is in the syllable immediately preceding the velar stop (the Stress Effect). These effects are argued to be phonetically grounded, related with confusability of K~Tʃ: contexts where K and Tʃ are more distinct (in proximity to stress and when the vowel is [-high]) license the contrast and palatalization is blocked. The picture that emerges is in (1) (adapted from Giavazzi 2010). While the data in (1) seems to go against \*KE as the markedness constraint behind palatalization, there is a second class of inflection that has /-e/ and /-i/ as sg. and pl. suffixes (this class is unspecified for gender). No root of that class of inflection surfaces with root-final [K], while many surface with [Tʃ].

<b>(1)</b>	Trigger	i	Sg. [mónak-o] Pl. [mónatʃ-i]	`monk' mas.	This suggests that indeed *KE is a productive markedness constraint in MI, since there seems to be neutralization of [str] before /-e/ in the singular forms of that class.
			Sg. [mónak-a] Pl. [mónak-e]	`monk' fem.	
	Stress conditioning	yes	Sg. [kó.mi.k-o] Pl. [kó.mi.tʃ-i]	`comic'	
			Sg. [an.tí.k-o] Pl. [an.tí.k-i]	`antique'	
Voicing distinction	no	Sg. [filólog-o] Pl. [filólodʒ-i]	`philologue'	[str] before /-e/ in the singular forms of that class.	
		Sg. [aspárag-o] Pl. [aspáradʒ-i]	`asparagus'		

**Verbs.** A rich pattern of misapplication is observable in the Present Indicative paradigm of verbs. Table (2) shows the relevant data. I adopt the insight of Steddy (2015), where the Base is the infinitive form, as the most morphophonologically informative form of the paradigm. Faithfulness to the Base translates then into retaining the value for stridency found in the infinitive across the paradigm. I list only the 1sg and the 2sg forms for reasons of space. The infinitive suffixes are -áre, -ére, -ire and -ere.

	-áre: underapplication	-ére, -ire: overapplication	-ere: normal application	
inf.	plá.ká.re 'to calm'	ta.tʃé.re 'be silent'	vín.tʃe.re 'to win'	di.rí.dʒe.re 'to direct'
1sg.	plák-o	tátʃ-o	vínk-o	diríg-o
2sg.	plák-i	tátʃ-i	vínʃ-i	dirídʒ-i

The crucial constraint in Steddy (2015) enforces faithfulness wrt. stridency to a segment in the Base, provided that that segment is in the stressed syllable in the Base. His ranking is then:

**(3)** BD Id [str]/σ >> \*KE >> IO Id. The context of the BD Id constraint is crucial for the derivation of the normal application pattern: in verbs of the -ere class, the stress in the infinitive is on the root. This means, given the phonology of Modern Italian, that the root-final velar stop is not in a stress position (unlike for all other conjugation classes). Therefore the BD Id constraint in (3) is inert, and the highest ranking constraint is \*KE, hence the normal application. **The analysis.** The key to the unification of the two systems is to split the crucial stress-conditioned BD Ident constraint into two: one targets the velar stop K, the other targets the affricate Tʃ. These constraints have slightly different contexts. BD Id  $K_B / \{ \_ \}_\sigma$  penalizes outputs with segments before [e] which differ from its correspondent K in the Base. BD Id  $K_B / \{ \_ \}_\sigma$  enforces faithfulness to a correspondent K in the Base provided that K is in a syllable in the Base that is either stressed or immediately following one that is. BD Id  $Tʃ_B / [ \_ ]_\sigma$  enforces

faithfulness to Tj in the Base if the segment is in a stressed syllable there. The Bases are the singular masculine for nouns and adjectives, the infinitive for verbs. The unified ranking I propose is:

(4) BD Id K<sub>B</sub>/[\_e<sub>D</sub>], BD Id K<sub>B</sub>/[\_]σ, σ[\_]σ >> \*KE >> BD Id Tj<sub>B</sub>/[\_]σ >> IO Id [str]

The Height effect is caused by a BD Ident constraint: since BD Ident constraints are inert when deriving Bases, this correctly predicts that in deriving nouns/adjectives of the -e/-i class and infinitive of verbs (the Bases) /-e/ is a trigger of palatalization, enforced by \*KE. Elsewhere in paradigms, [Tje] from underlying /ke/ will be caused by Output-Output faithfulness enforced by other BD Ident constraints. The critical cases where (4) has to be tested are the Stress Effect (why palatalization in nouns and adjectives with penultimate stress is blocked) and the difference between the normal application and the overapplication conjugations. The tableaux in (5) illustrate the most critical and less obvious derivations.

(5)		BD Id K <sub>B</sub> /[_e <sub>D</sub> ]	BD Id K <sub>B</sub> /[_]σ, σ[_]σ	*KE	BD Id Tj <sub>B</sub> /[_]σ	IO Id [str]	Higher BD Ident delivers the Stress effect (and under-appl. in-áre verbs)
(a)	/an.tí.k-i/ B: antíko →antíki antífi	✓	✓	*	✓	✓	
		✓	*!	✓	✓	*	
(b)	/tak-o/ B: tafére táko →táfjo	✓	✓	✓	*!	✓	Overapplication is due to the lower BD Id constraint
		✓	✓	✓	✓	*	

Despite showing only two derivations, (5) presents the case for the split. The BD Id targeting K, given its weaker context, guarantees the Stress effect: Bases with penultimate stress (like *antíko*) are such that BD Id K<sub>B</sub> applies and therefore the velar stop has to be retained. The same is true for verbs whose infinitive form ends in [-Káre]: /a/ does not trigger palatalization, the K is in the stressed syllable in the infinitive (the Base), and therefore palatalization underapplies at the cost of violating lower-ranked \*KE (as (2) shows, it is [plák-i] and not \*[pláf-i]). The BD Id targeting Tj crucially has a stronger context, that will make it apply when the Base is of the -ére class (as in the Tableau), but not with verbs like *diridzere* (of the conjugation where stress is on the root). Overapplication is in fact the result of violating IO Id [str] rather than higher-ranked BD Id Tj<sub>B</sub>/σ. When deriving the paradigm of *diridzere*, the context of this constraint is not met and therefore, everything else being equal, the form that violates IO Id [str] (the overapplying \*[diridzjo]) is excluded. Cases that are superficial counterexamples to the generalizations above are also accounted for in this analysis. Take the noun *káriko* ‘load’: its plural is [káríki] in “violation” of the Stress Effect. If the Base were [káríko], the ranking I defend here would indeed make the wrong prediction. But this noun is a transparent deverbal derivation from the verb *karikáre*, and if this infinitive form is assumed to be the Base, the ranking produces the right winner:

(6)		BD Id K <sub>B</sub> /[_e <sub>D</sub> ]	BD Id K <sub>B</sub> /[_]σ, σ[_]σ	*KE	BD Id Tj <sub>B</sub> /[_]σ	IO Id [str]	The Base here is not the local base, because the noun is deverbal.
	/ká.ri.k-i/ B: karikáre →káríki kárífi	✓	✓	*	✓	✓	
		✓	*!	✓	✓	*	

Other cases of derivation (deverbal, denominal or dedjectival) that contradict the above mentioned generalizations are all correctly derived by assuming a non-local Base. **Consequences of the analysis.** The analysis I present achieves three main results. It provides a unified account of what superficially look like two quite different systems: this is not done by indexing constraints for parts of speech, which would greatly increase the generative power of any theory allowing for it, but instead it exclusively relies on the form of the Base (infinitive vs. masculine singular), which is a more intuitive and economical reason for the different behavior of different parts of speech. Secondly, this analysis makes an argument for the fact that local Bases are not necessarily the Bases that are relevant for the phonological derivation. This is because the local Base of e.g. a noun like *káríki* is the masculine singular form *káriko*: however, the faithfulness to K that is enforced in deriving this plural is to a non-local Base, namely the infinitive of the verb from which the noun is derived, *karikáre*. Finally, this analysis shows that in the present case, in order to capture an alternation of the type [+F]~[-F] (F being strident, here), there have to be two distinct BD Ident constraints, one targeting [+F] and one [-F], such that the higher-ranking one has a weaker (i.e. broader) context of application. This, especially considering the argued phonetic grounding of the licensing of the alternation, raises interesting questions about asymmetries in confusability of K vs. Tj.