

Instances of sibilant palatalization in the dialect of Naousa

Ioanna Kappa & Konstantinos Sipitanos
University of Crete

1. Introduction

The dialect of (town) Naousa belongs to the group of semi-northern Greek dialects. This dialect exhibits the phonological phenomenon of unstressed mid vowel raising instead of the phenomenon of unstressed high vowel deletion, which is typical of the semi-northern¹ dialectal group (Kontosopoulos 1981: 70).

In this paper, we present and discuss various dialectal instances of sibilant palatalization. In section 2.1, we present the methodology for data collection during our fieldwork. In section 2.2, data and presentation of the instances of palatalization in various contexts follow, namely (a) in a strictly adjacent front vowel context, (b) in a context with an intervening stop between the sibilant and the triggering front vowel, and (c) palatalization at a distance. In 2.3, the data analysis and discussion of the various instances of sibilant palatalization follow. In section 3, we conclude.

2. Sibilant palatalization in the dialect of Naousa

2.1 Method-Data collection

The present study examines dialectal data collected during our fieldwork in Naousa (Spring 2013). The fieldwork as well as the selection of informants was carried out in accord with the linguistic field methods described in Vaux and Cooper (1999). Our collected dialectal corpus consists of recordings of natural conversational speech between two female speakers of the dialect (informant-1, age 83 and informant-2, age 86), as well as natural conversations (semi-directed interviews) between each informant and the second author of this paper, who is a native speaker of the dialect. None of the female informants had spent any period away from Naousa. The conversations (1 hour and 6 minutes in total) revolved around informants' family, hobbies, work, stories from the past, etc. For the purposes of the recordings it was used a Blue Yeti microphone at a sampling rate of 44.1. kHz. The conversational material was recorded directly onto a laptop hard disk via Audacity, a free digital recording computer software application (version 2.0.4). The phonetic realizations of palatalized sibilants, both in CV and sCV syllables, have been verified by acoustic measurements.

2.2 Data presentation

In our dialectal corpus, there are various instances of sibilant² palatalization a fact which is a common phonological phenomenon in the semi-northern and northern Greek dialects (e.g. Newton 1972; Kontosopoulos 1981, among others). The typical sibilant palatalization is triggered by the

¹ The Greek dialects which exhibit the phonological phenomena of (unstressed) high vowel loss and raising of the unstressed mid vowels /e/ and /o/ are classified as northern ones. On the contrary, the dialects which exhibit either unstressed high vowel loss or unstressed mid-vowel raising are classified as semi-northern ones (see Newton 1972; Kontosopoulos 1981, among others).

² 'Sibilant' is a cover term for strident fricatives and affricates.

following stressed front vowels /i/ and /e/ as in (1, 2, 3), by an unstressed primary /i/ in (4, 5) and by an [i] derived from a raised underlying /e/ in (6).

	U.R	Dialectal	Gloss
(1)	/xrisí/	[xriší]	‘Chrisi’, proper name
(2)	/ksérete/ know-PRS.2PL ³	[kšériti]	‘you know’
(3)	/esí/	[iší]	‘you’-2SG
(4)	/korítsi/	[kurítši]	‘girl’-NOM.SG.
(5)	/pézi/ play-PRS.3SG	[péži]	‘(s)he plays’
(6)	/ise/ are-PRS. 2SG	[íši]	‘you are’

In the above data (1-6), the sibilant palatalization is triggered by a strictly adjacent (following) front vowel, thus resulting in a minor change in the place of articulation, i.e. the alveolars /s/ and /ts/ shift to postalveolars (palato-alveolars), [š] and [tš] respectively.

In the following data (7-12), the triggering vowel is not strictly adjacent to the palatalized sibilant due to an intervening stop, such as a Dorsal /k/ in (7), a Coronal /t/ in (8-11) and a Labial /p/ in (12), thus violating the strict adjacency.

	U.R	Dialectal	Gloss
(7)	/skilí/	[ščilí]	‘dog’-NOM.SG.
(8)	/kostí/	[kuští]	‘Kosti’, proper name
(9)	/nistía/	[ništía]	‘fasting’-NOM.SG.
(10)	/ímaste/ are- PRS.2PL	[ímašti]	‘we are’
(11)	/aróstisa/ fall ill-PST.1SG	[aróštisa]	‘(I) fell ill’
(12)	/spíti/	[špíti]	‘house’-NOM.SG.

Similar findings, as above in (7-12), are also attested in the other semi-northern and the northern dialects, e.g. /skílos/ > [ščílus] ‘dog’ in the dialect of Epirus (Newton 1972: 153).

In the dialect of Naousa, cases of sibilant palatalization are also attested not in the proper vocalic environment, namely the sibilant is in (final) coda position and emerges as palatalized after the front vowel, as in (13, 14). Note that another, properly palatalized, sibilant also occurs within the word.

³ Abbreviations: NOM (Nominative), SG (Singular), PL (Plural), PRS (Present), FUT (Future), 1/2/3 (first /second/third person)

	U.R	Dialectal	Gloss
(13)	/esís/	[išíš]	‘you’ 2PL
(14)	/ðútsis/	[ðútšiš]	‘Doutsis’, family name

If within the word there is not any properly palatalized sibilant, then the word final sibilant remains unpalatalized as in (15):

(15)	/tákis/	[tácis]	*[táciš]	‘Takis’, proper name
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Finally, an interesting instance of sibilant palatalization occurs in the data (16-20). If within the word there is a properly conditioned palatalized sibilant, then all sibilants occurring to its left emerge as palatalized too, even if the palatalization conditions are not met (for analysis and discussion, see section 2.3.2).

	U.R	Dialectal		Gloss
		<i>informant-1</i>	<i>informant-2</i>	
(16)	/zósi/ belt-FUT.3SG		[žóši]	‘(s)he will belt’
(17)	/anástasi/	[anáštaši] ~ [anástaši]	[anáštaši]	‘resurrection’-NOM.SG.
(18)	/škási/ burst-FUT.3SG	[škáši] ~ [skáši]	[škáši]	‘it will burst’
(19)	/skúzi/ cry (loudly)-PRS.3SG	[škúži]	[škúži]	‘(s)he cries loudly’
(20)	/spási/ break-FUT.3SG	[špáši] ~ [spáši]	[špáši]	‘it will break’

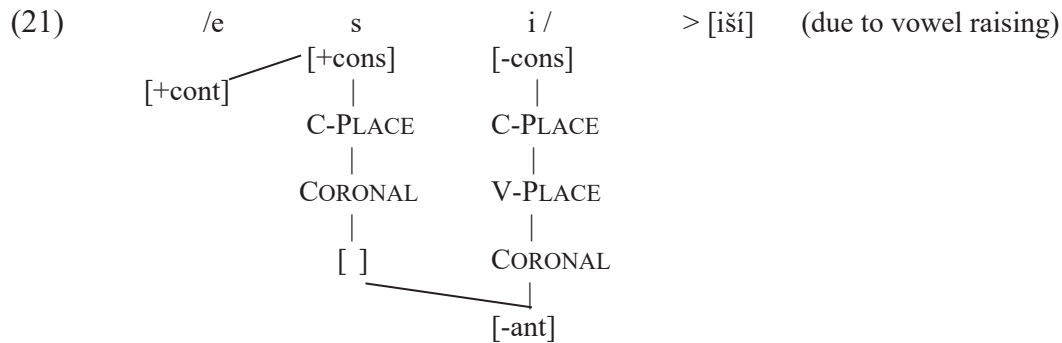
2.3 Data analysis-Discussion

2.3.1 Sibilant palatalization

For the analysis of sibilant palatalization in the above data (1-12) we follow the model of *Feature Geometry* (Clements 1991) and its subsequent versions (Hume 1992/1994; Clements & Hume 1995). In this Feature Geometry model, it is assumed a unitary set of features for both consonants and vowels, for instance, the coronal consonants and the front vowels share the PLACE feature [CORONAL] (e.g. Lahiri & Evers 1991; Hume 1992/1994; Clements & Hume 1995). The binary feature [\pm anterior] is directly placed as a dependent of [CORONAL] and, according to Hume (1994: 121), all vowels are inherently [-anterior]. All segments have both a C-PLACE node and a V-PLACE⁴ node. The articulators, i.e. the main PLACE features such as [CORONAL], [LABIAL], and [DORSAL], are placed under C-PLACE node in the case of consonants, but are placed under the V-PLACE node in the case of vowels. In the phonological theory, the CORONAL place of articulation (PoA) is considered as the unmarked one (e.g. Paradis & Prunet (1991) and papers therein, among many other studies) and the coronal consonants are assumed to be underspecified for the PoA feature which is provided by universal markedness conditions, i.e. []→[Coronal] (e.g. Kiparsky 1982; Archangeli & Pulleyblank 1986; Avery & Rice 1989, among others).

⁴ C-PLACE: Consonantal Place, V-PLACE: Vocalic Place

In an assimilation process like the palatalization of sibilants in the dialect of Naousa, e.g. the data in (3) /esí/ > [iší], repeated in (21), the front vowel /i/ spreads its V-Place [CORONAL[-anterior]] feature to the preceding coronal strident consonant /s/. The segment /s/ is underspecified for anteriority and the [-ant] vocalic feature of the following vowel spreads leftwards and fills in its empty place slot. The direction of spreading is leftwards, because the palatalization rule in Greek is regressive. The condition for spreading is strict adjacency of trigger and target of palatalization with no intervening segment between them.



In the dialect of Naousa the segment /s/ takes the feature [+ant] by a default rule in the environment of following non-coronal vowels /u/, /o/, /a/, e.g. [súpa] ‘soup’, [sóma] ‘body’, [sapúni] ‘soap’.

In the above data in (7-12), the triggering vowel is not strictly adjacent to the palatalized sibilant due to an intervening stop, such as a Dorsal /k/ in (7), repeated in (22), a Coronal /t/ in (8), repeated in (23), and a Labial /p/ in (12), repeated in (24), thus violating the strict adjacency. The palatalization of sibilant is considered as an overapplication of the rule (Benua 1995), because the proper condition for the rule application does not apply.

	U.R	Dialectal	Gloss
(22)	/skilí/	[ščilí]	‘dog’-NOM.SG.
(23)	/kostí/	[kuští]	‘Kosti’, proper name
(24)	/spíti/	[špíti]	‘house’-NOM.SG.

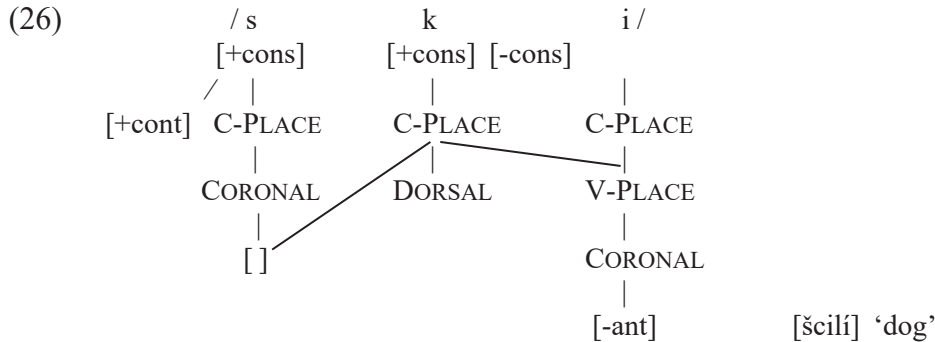
In a serial derivation, as for example by Newton (1972: 151), the dialectal output [ščilí] in (22) is derived as follows: the dorsal /k/ is realized as a palatal [c] in the context of a following front vowel (25a) and the alveolar sibilant /s/ assimilates the palatalization of the following dorsal and surfaces as a post-alveolar (palato-alveolar) [š] (25b). In the latter case the [+anterior] sibilant fricative /s/ changes to [-anterior] [š].

(25)

	Serial derivation	/skilí/
a.	Palatalization of dorsal /k/:	[scilí]
b.	Palatality assimilation of /s/:	[ščilí]

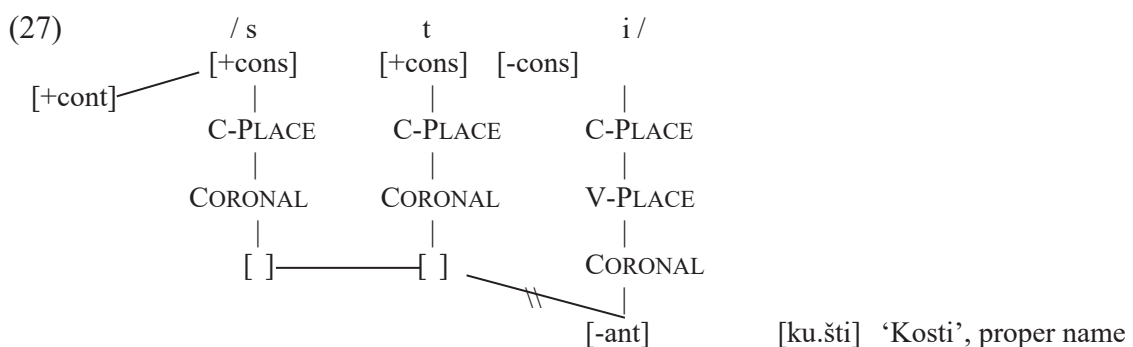
In our analysis, within the framework of the feature geometry the output [ščilí] ‘dog’ emerges as follows (see schema in 26): the dorsal segment /k/ acquires the [CORONAL] place of articulation (PoA) under the V-place node in addition to its own [DORSAL] place feature and becomes [c]. This is a case of ‘simple’ palatalization (Topintzi & Baltazani 2014). Bateman (2007: 226) argues that the derived [c] is fully palatalized and not secondarily palatalized. We follow Clements and Hume (1995) who argue that the change of /k/ to [c] is a secondary palatalization *per se* and the full palatalization is actually the coronalization, i.e. the change of /k/ to [tš], where /k/ completely

changes its original [DORSAL] PoA feature, which is not the case in the above example in (22). Taking into consideration the assumption that only specified features can spread, the palatalized DORSAL spreads the specified [-ant] feature to its left adjacent strident in the cluster, and the strident becomes palato-alveolar, namely the process of palatalization is iterative, like in Basque and Romanian (Bateman 2007). This iterative palatalization is common in the other semi-northern and northern dialects too (Newton 1972). A spreading of vocalic [-ant] feature to both /k/ and /s/ is illicit, due to the triple feature association. Topintzi and van Oostendorp (2009) argue that a ‘feature F can be associated to maximally two positions’, therefore it is prohibited a triple or a multiple feature association.

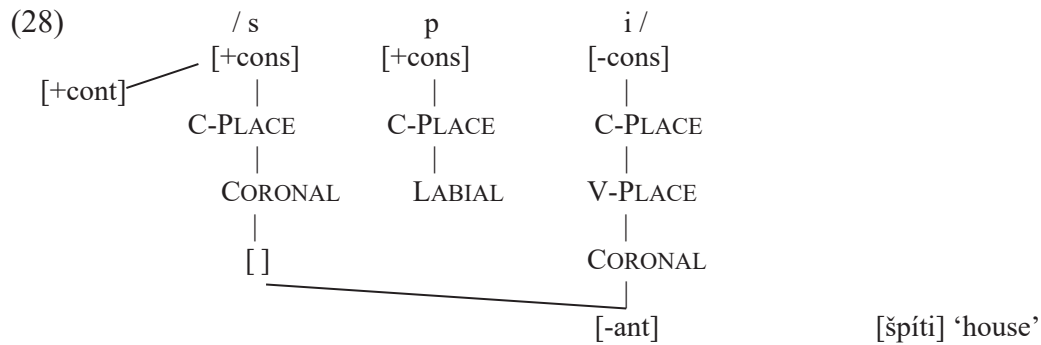


The realization of the palatalized sibilant in the above data, (23) and (24), /kostí/ > [kuští] ‘Kosti’ and /spíti/ > [špíti] ‘house’ respectively, is opaque with respect to palatality. We assume that the CORONAL and LABIAL oral stops do not surface as palatalized ones in this dialect due to the action of the dialect-specific markedness constraints *[tʲ] and *[pʲ] which prohibit coronals and labial stops to surface with a secondary palatalization, namely the latter stops may not bear the feature [-ant] in the output. For the dialect of Naousa, we assume the markedness hierarchy *[pʲ], *[tʲ] >> *[kʲ] which prohibits the realization of palatalized Labial and Coronal stops.

In the data in (23) /kostí/ > [kuští], we assume that it is not possible for the vowel /i/ to spread its [-ant] feature directly to the strident /s/ due to the NOLINE CROSSING constraint (Goldsmith 1976), which states that association lines do not cross, namely the vocalic [-ant] feature may not spread over the association line of the coronal stop on the same tier. We assume that here occurs a case of iterative palatalization and concomitant depalatalization (delinking of [-ant] node of the coronal stop) (27), due to the specific markedness constraint against palatalized coronal stops.



In the data in (24), /spíti/ > [špíti] ‘house’: the Labial stop is unspecified for the feature [anterior], as it has its place specifications on the LABIAL tier. Therefore, it is assumed that /p/ acts as ‘neutral/transparent’ segment, because it is not specified with the feature in question (Itô & Mester 1986). We assume that the [-ant] vocalic feature spreads directly to the strident fricative /s/, changing it to [-ant] [š], as in (28).



2.3.2 Sibilant agreement

In the data above in (16-20), repeated in (29-34), palatalized sibilants in the context of a back vowel, in either a /CV-front/ (29) or a /sCV-front/ syllable (30-34), occur. We note that within the word, there is a properly conditioned, rightmost palatalized sibilant too. This is not the case of autosegmental spreading from the rightmost palatalized sibilant to its left, because spreading demands strict adjacency between trigger and target (see above section 2.3.1), which is not the case in these data. We assume that the -not properly conditioned- palatal sibilants in the dialect of Naousa arise due to *featural agreement* between sibilants, in other words they surface only if they agree featurally with a corresponding (properly) palatalized sibilant (agreement through correspondence, cf. Rose & Walker 2004, among others). In this case of the above, featural agreement occurs only a minor change that of the PoA feature [anterior], i.e. a [+ant] /s/ changes to a [-ant] [š] in order to agree with the corresponding, rightmost palatalized sibilant [š]. The sibilant agreement (SA) applies between very similar segments, e.g. sibilants (fricatives and affricates), but does not affect the other consonants within the domain. The intervening oral stops or vowels are transparent, do not block the long-distance agreement and, according to Gafos (1999), SA affects only sibilants due to the ‘nature of the agreeing tongue tip constriction feature’.

SA is also widely referred to as ‘sibilant harmony’ and it is documented in many languages e.g. Native American languages, Bantu languages, Moroccan Arabic, Berber (see Rose & Walker 2004 and references therein).

The sibilant agreement at a distance emerges in the speech of older generation in the dialect of Naousa, is subject to inter- and intra-speaker variation and may apply optionally.

	U.R	Dialectal		Gloss
		<i>informant-1</i>	<i>informant-2</i>	
(29)	/zósi/ belt-FUT.3SG		[žóši]	‘(s)he will belt’
(30)	/anástasi/	[anáštaši] ~ [anástaši]	[anáštaši]	‘resurrection’-NOM.SG.
(31)	/skási/ burst-FUT.3SG	[škáši] ~ [skáši]	[škáši]	‘it will burst’
(32)	/skúzi/ cry (loudly)-PRS.3SG	[škúži]	[škúži]	‘(s)he cries loudly’
(33)	/spási/ break-FUT.3SG	[špáši] ~ [spáši]	[špáši]	‘it will break’

(34)	/ksapostási/ take a rest-FUT.3SG	[kšapoštáši] ~ [ksapoštáši] ~ [ksapostáši]	‘(s)he will take a rest’
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In our data, dialectal instances of a palatalized sibilant in final coda position are also attested, as in (35) and (36).

	U.R	Dialectal	Gloss
(35)	/esís/	[išíš]	‘you’-2PL
(36)	/ðútsis/	[ðútšiš]	‘Doutsis’, family name

We claim that the realization of a palatalized sibilant in coda position is not the result of feature spreading, since palatalization is regressive in Greek, but is due to the effect of sibilant agreement within the domain of the syllable. Rose & Walker (2004) show that, although SA operates in most languages regressively, there are languages, like Aari, with progressive directionality.

In the data in (37), the final strident /s/ is not palatalized, because the condition for sibilant agreement is not met, providing that the corresponding palatalized consonant [c] is an oral stop.

(37)	/tákis/	[tácis]	*[táciš]	‘Takis’, proper name
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3. Conclusions

In this paper, we presented and discussed instances of sibilant palatalization in the semi-northern Greek dialect spoken in the town of Naousa (Makedonia). In this dialect, the sibilants, fricatives and affricates are palatalized in the environment of a following front vowel, thus, changing to the [-anterior] place of articulation feature and surface as [š] and [tš], respectively. This instance of sibilant palatalization is very productive in the semi-northern and the northern Greek dialects. The palatalization is analyzed as a spreading effect under the condition of strict adjacency of trigger and target. The second instance of a sibilant palatalization involves cases where the triggering vowel is not strictly adjacent to the palatalized sibilant due to an intervening stop, such as a Dorsal, a Coronal and a Labial, thus, violating the strict adjacency. We assume that in the case of an intervening Dorsal or Coronal the process of palatalization is iterative, i.e. the strident assimilates the palatalization of the intervening stop. The Coronal stop does not surface as a palatalized one, due to markedness constraint *[tʃ] which prohibits palatalized coronal stops in the dialect, therefore it depalatalizes. If the intervening stop is a Labial one, then the front vowel spreads directly to the strident. A last instance is the palatalization at a distance, as a result of featural agreement between a sibilant with a corresponding palatalized one. The directionality of featural agreement is regressive, but it can also be progressive in the case of agreement between the strident in coda position and the corresponding palatalized sibilant. The sibilant agreement at a distance may apply optionally, is subject to inter- and intra-speaker variation and emerges mainly in the speech of older generation.

Acknowledgements

* Many thanks to the audience of MGDLT6 (September 2014, Patras) for the fruitful discussion and the constructive feedback. All remaining errors are our own.

** This paper was supported by the VOCALECT Project (MIS 379396) of THALES Research Funding Program co-financed by the European Union (European Social Fund-ESF) and Greek national funds through the Operational Program ‘Education and Lifelong Learning’ of the National Strategic Reference Framework (NSRF).

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