

Perceptually driven blocking of palatalization in L1 Greek child speech

In this study we analyze the naturalistic, longitudinal production data from one normally developing child (boy) acquiring Greek as L1, in the dialectal environment of a village in Crete. The child at the age of 2;06 is in the intermediate developmental phase. This phase is characterized universally by the emergence of more marked sounds, its duration is quite long lasting and it is characterized by a variety of type production, until the child systematically realizes all target words (Ingram 1989; Macken 1992, among many others). The child of the present case study has already acquired and realizes all consonants, but /r/, in simple onsets of [CV] syllables. The child does not realize yet the complex onsets of [Stop/Fricative + Sonorant], e.g. [kl/kr, kn, pl/pr, pn, fl/fr/, xl/xr, γr/γl], but applies the widely attested pattern of reduction to the less sonorous consonant, thus it is realized only the Stop or the Fricative member of the target CC-cluster.

The topic of our study focuses on the palatalization of target DORSALS /k, g, x, γ/ in the environment of a following front vowel. The rule of DORSAL palatalization is active in the child's system (data 1-4), as well as the rule of SONORANT palatalization, e.g. /l/ changes to [ʎ] (5) and /n/ to [ɲ] (6) in the environment of the (un)stressed high, front vowel /i/; the application of Sonorant palatalization has a very high frequency in the ambient (dialectal) language of eastern Crete. The palatalizations in (1-6) are attested only in primary (underlyingly) CV-syllables.

In the case of a target /DORSAL+Sonorant+V_{front}/ syllable, e.g. /kli/, /kre/, /xri/, after the cluster simplification and reduction of Sonorant, the child does not realize a single onset with an expected palatalized DORSAL, e.g. [ci], [ce], [çi] respectively, but Dorsal palatalization is blocked, as shown in the data (7-13). This is a paradoxical phenomenon, because the child is highly exposed in a dialect with idiosyncratic velar palatalizations, namely from plain palatalized velars up to dialectal palatal [c^ɛ] and alveolo-palatal [t^ɛ] affricates (Lengeris & Kappa, 2016). In the data (7-13), the Sonorant reduction interacts with the following vowel changes which are confirmed by an acoustic analysis of the F1 and F2 frequencies of the realized vowels, i.e.

- (i) the front, mid unstressed vowel /e/ is centralized to [ə] in (7, 8),
- (ii) the high front unstressed vowel is centralized to [ɨ] in (9, 10),
- (iii) the stressed front vowels are realized phonetically as long ones in (11, 12, 13).

We claim that DORSAL palatalization only occurs if the interacting C-V segments are underlyingly strictly adjacent as in (1-6). This is a common natural phonological process that is phonetically motivated by front vowels. In the case of target clusters in (7-10), the Sonorant reduction interacts with centralization of the unstressed front vowels; the centralized vowels, [ə] in (7, 8) and [ɨ] in (9, 10), lack in [+front] features, thus palatalization can not apply. It has to be mentioned that the child has not any external evidence from his ambient dialect for the centralized marked vowel [ɨ] which does not belong to his phonological system. The Sonorant reduction seems also to result in compensatory lengthening (CL) of the tautosyllabic front stressed vowels in (11-13).

We claim that vowel centralization and CL are in complementary relationship. In psycholinguistically prominent or strong positions, like the word initial stressed syllables (Smith, 2002), the stressed vowel retains its [front] feature which spreads in order to fill in the empty segmental position, but in unstressed syllables occurs centralization. The blocking of palatalization in (7-13) is *perceptually driven*, i.e. the child perceives/has phonologically encoded the target, (non-palatalized) DORSAL obstruent and tries to realize it faithfully, thus resulting in the (phonetic) change of the (target) vowel value .

DATA

	<u>Child's realizations (age 2;06)</u>	<u>Gloss</u>	
	with Palatalization		
1)	/ke/ [ce]	'and'	
2)	/kítirino/ [cítino]	'yellow' - NOM. SG	
3)	/áxira/ [áçira]	'straw' - NOM.PL.	
4)	/sfíges/ [fíçes]	'wasp' - NOM.PL.	
5)	/poliθróna/ [poliθóna]	'armchair' - NOM. SG	
6)	/zóni/ [zóni]	'belt' - NOM. SG	
	Blocking of Palatalization	instead of	
7)	/kreváti/ [kəvátɪ]	[cevátɪ]	'bed' - NOM. SG
8)	/gremístike/ [gəmistice]	[çemístice]	'(it) fell in
9)	/xristúlis/ [xistúlis]	[çistúlis]	'(baby) Christ'
10)	/tíçri/ [tíçɪ]	[tíçɪ]	'tiger' - ACC. SG
11)	/klínume/ [kí:nume]	[cínume]	'(we) close'
12)	/kréma/ [ké:ma]	[céma]	'cream' - NOM. SG
13)	/xrísa/ [xí:sa]	[çísa]	'Chrisa', name

Selected References

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