

Homework: Palatalization

The Spanish language includes several velar sounds and palatalized sounds. For example, in (1) - (8) below one can see both the velar sound and its palatalized variant.

- | | |
|----------------------------|------------------------|
| (1) [kláro] – ‘clear’ | (5) [óyɣa] – ‘listen!’ |
| (2) [kímika] – ‘chemistry’ | (6) [ayíla] – ‘eagle’ |
| (3) [ganár] – ‘to win’ | (7) [pyóxo] – ‘louse’ |
| (4) [gíño] – ‘wink’ | (8) [xinéte] – ‘rider’ |

No minimal pairs exist in the data, suggesting that there is an allophonic relationship between velars and palatals. A generalization that can be drawn from the data is that the palatalized allophone occurs when the velar phoneme is followed by a front vowel. This can be formalized as in (9) and will be called the Palatalization rule.

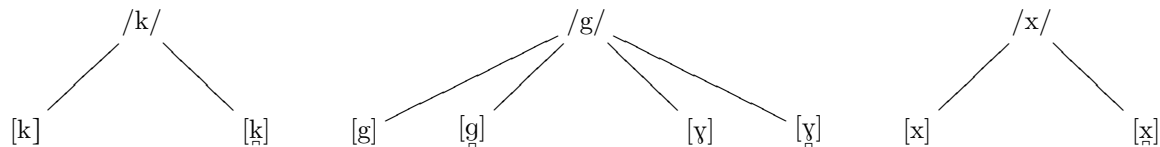
- (9) Palatalization rule: velar → dorso-palatal / ___ V_{front}

Note, for words with a variant of [ɣ] the Stop-fricative rule must also apply for the phoneme /g/ to become the allophone [ɣ]. The Stop-fricative rule is provided in (10) for the reader’s convenience.

- (10) Stop-fricative rule: voiced stop or affricate_{αpoa} → fricative / X_{αpoa} ___

Ordering does not appear to matter between the Palatalization rule and the Stop-fricative rule. However, it is still possible that intervening rules will dictate the ordering of the Palatalization rule and Stop-fricative rule relative to each other. For the time being though Palatalization will come before Stop-fricative.

With the combination of these two rules we have three phonemes /k, g, x/ and associated allophones.



To see how these rules apply, two derivations are provided below for [kímika] and [áyila].

	/kimika/		/agila/
palatalization	k̞imika		aɣila
	·		·
	·		·
stop-fricative	n/a		ayila
	·		·
	·		·
phonetic representation	[kímika]		[áyila]

For the word [kímika] note that the Palatalization rule applies once and also does not apply once. The first /k/ becomes palatalized because it is followed by the front vowel /i/, but the second /k/ remains unpalatalized because it is followed by the mid vowel /a/.

In conclusion, Spanish has a contrast between velar sounds and palatalized sounds, but this contrast is allophonic not phonemic. To account for the relationship a rule was written called the Palatalization rule which, in conjunction with the Stop-fricative rule, accounts for a data set that includes both velar and palatal stops and fricatives.