

Spanish is a Romance language of the Indo-European family, spoken in Spain and South America. Spanish has allophonic tense [i e o u] and lax [ɪ ɛ ɔ ʊ] non-low vowels. The low vowel [a] does not alternate, so your analysis should leave it unchanged.

papɛl	'paper'	rumbɔ	'direction'	ditʃa	'happiness'
galardɔn	'reward'	posɔ	'well'	bruto	'stupid'
makina	'machine'	salud	'health'	mikrobjo	'microbe'
pero	'but'	diktar	'dictate'	rudo	'rough'
kotʃe	'car'	korto	'short'	desjerto	'deserted'
ipnotiko	'hypnotic'	berdura	'verdure'	nukleo	'nucleus'

Explain the distribution of tense/lax vowels in prose and with a formal rule in autosegmental tree form. What assumptions must you make about Spanish syllable structure? Be specific, and cite relevant examples from the data, showing their assumed syllabification.

Compare your analysis to the most obvious logical alternative. What aspects of your analysis are superior? In particular, pay attention to the ease and simplicity with which a formal rule can be written. How does your analysis interact with the articulatory fact that low vowels make it difficult to advance the tongue root, so they are by default [-ATR]?

Further, in many dialects of Spanish, /s/ is not allowed in codas. Instead, it appears as [h] in some dialects (as in many Caribbean dialects) and is deleted entirely in others (as in Eastern Andalusian Spanish).

standard Spanish	Caribbean Spanish	Eastern Andalusian	
madre	madre	madre	'mother'
madres	madreh	madre	'mothers'
djo	djo	djo	'he/she gave'
djos	djuh	djo	'God'
perdi	perdi	perdi	'I lost'
perdis	perdirh	perdi	'partridge'

Assuming that all dialects of Spanish have the same URs (with /s/ in the relevant positions), write two separate formal rules in autosegmental tree form to account for the the different treatment of /s/ in the two non-standard dialects. For simplicity in Caribbean Spanish, assume there are late redundancy rules that ensure that an [h]-like sound is given all the proper features; you do not need to formalize these redundancy rules, but you should explain in prose which features you assume need to be "cleaned-up" by the redundancy rules before a proper SR is produced.

Does either non-standard dialect require rule ordering between its coda-/s/ rule and the general Spanish rule for tense/lax vowels? Give derivations for a single crucial word, using both possible orderings for both non-standard dialects. That is, you should have four derivations total, all for the same word, two per dialect. Briefly explain for each non-standard dialect how its two derivations illustrate that ordering is or is not required.

Finally, does any part of your analysis of Spanish dialects shed light on any of our "controversial" feature choices? In particular, do any of the controversial feature values make a particular aspect of the [h] redundancy rules necessary or unnecessary? Discuss your answer fully and carefully, giving example feature trees where appropriate.