

Resolving a Bracketing Paradox in Kinyarwanda

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Kinyarwanda has several phonological rules sensitive to the morphology. Three of these , Vowel Hiatus Resolution (VHR), Glide Cluster Resolution (GCR), and Palatal Harmony (PH), are sensitive to different morphological boundaries (Kieffer 2019). GCR is sensitive to the stem-suffix boundary, while VHR and PH are sensitive to the stem-prefix boundary. Such boundary-sensitive rules are evidence of the different cyclic domains as predicted by Lexical Phonology (Kiparsky 1982), Stratal OT, or the Lifecycle of Phonological Processes (Bermudez-Otero 1999). These three rules imply different bracketings of the stem domain, with GCR implying that only the prefixes and stem are in the stem domain, and VHR and PH implying that only the suffixes and stem are. This creates a bracketing paradox.

This paradox can be resolved, by reanalyzing the GCR as being conditioned by a representational difference between underlying vowels and glides, instead of morphological environment. The conjoined constraint IdentSyll&_{seg}IdentSib allows us to enforce a difference between the resolution of gliding-vowels versus underlying glides. The data in this abstract come from a combination of the author’s field work, Kimenyi 1979, the Leipzig Corpora Collection 2017, Seymour 2017, and Walker et al. 2008.

Kinyarwanda has typical East Bantu morphology. Prefixes mainly consist of the subject and object markers, tense markers, and the conjoint marker. Suffixes consist of valency-altering morphemes (causative, applicative, reciprocal, passive), and an aspect/modality-marking final vowel (Kimenyi 1980).

VHR is a persistent rule in Kinyarwanda, and the method is based on the left vowel, where /a/ deletes and high/mid vowels glide. The right vowel gets compensatory lengthening. /ai/ sequences however, determine their resolution method by the morphological environment. If a verbal prefix is involved, the /a/ deletes and the /i/ lengthens. If the sequence is in a stem and/or suffix, the vowels coalesce into [e:].

/a-za- it -a/	Cla1.3Sbj-FUT- call -FV	[a.zi.ta]	“He will call”
/ku-βa- itf - a/	INF-Cla2.Obj- kill -FV	[ku.βi.tʃa]	“To kill them”
/ku- ta -if-a/	INF- lose -CAUS-FV	[gu.te:ʃa]	“To cause to lose”

Palatal Harmony, is a leftward-moving harmony, which only affects coronal fricatives. /s/ and /z/ palatalize to [ʃ] and [ʒ] whenever the following syllable contains a postalveolar fricative. If the postalveolar fricative is farther away, PH becomes optional. This rule only occurs within the stem and suffix domains. Even when the prefix /zi-/ is attached to a stem with PH, there is no change in the prefix. This shows that the leftward-moving PH is blocked at the stem’s left.

/βa-sonz-je/	[βa.fo:.ɲʒe]	“They are hungry”
/n-sumbiz-je/	[nsu:.mbi.ʒe]~[ɲfu:.mbi.ʒe]	“I surpassed”

/zi-sa:z-je/	[zi.ʃa:ʒe]	“They (buildings) are old”
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Most glide clusters are banned in Kinyarwanda, and are resolved by a variety of methods, which are determined by the type of glide, the consonant involved, and the morphological environment. In the table below, /kj/ palatalizes in the stem and prefix, and spirantizes in the suffix. GCR treats the suffixes and the prefixes/stem as distinct morphological domains.

Prefix /kj/	/ki-onger-a/	Cla7.Sbj-increase-FV	[co:ŋge.ra]	“It (sign) increases”
Stem /kj/	/ku-ke-a/	INF-dawn-FV	[gu.ca]	“To dawn”
Suffix /kj/	/βa-vu:k-je/	Cla2.Sbj-born-PERF	[βa.vu:tse]	“They were born”

The three rules discussed imply different morphophonological bracketing rules. PH and VHR imply the stem and suffixes are in the same cycle, while GCR implies the prefix and stem are. If we look closer at the variation in GCR we see that, unlike PH and VHR, a morphology-free explanation is available. The glide clusters in the prefix and stem are the result of the VHR, while those in the suffix are underlying glides. By appealing to this representational difference, GCR is explainable sans morphology.

The conjoined constraint IdentSyll_{&seg}IdentSib blocks underlying vowels from spirantizing, by banning them from changing both their specifications for [±syll] and [±sib]. Since underlying glides are already [-syll], they can spirantize without violating this rule, in contrast to glided-vowels. Spirantization can then be treated as the least marked resolution method for y-clusters, and IdentSyll_{&seg}IdentSib forces y-clusters in the prefix and stem to find alternative methods.

This constraints allow us to account for the GCR without appealing to morphology, and therefore allow us to follow PH and VHR in presuming the stem domain includes suffixes but not prefixes in Kinyarwanda. The bracketing paradox can thus be avoided, since the remaining morpheme-sensitive rules are all sensitive only to the prefix-stem boundary.

Works Cited

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