Vowel and consonant harmony in Tagbana nominal classes

Vowel and consonant harmonies of the nominal domain of Tagbana, a Gur language of the Senufo family spoken in Côte d´Ivoire, are the topic of this talk (see Clamens 1957, Miehe 2012, and Traoré forthcoming, for Tagbana grammar). Morphology and phonology cannot be dissociated in these processes. Tagbana has four nominal classes primarily classified on the basis of their class markers (CM), class pronouns, presentatives, as well as other nominal morphemes, that have different forms in the singular and plural, all agreeing with their corresponding CM. The dependent and independent nominal morphemes underlie vocalic and consonantal harmony. The domain of the phonological phenomena investigated is the extended nominal phrase. In some cases, as in (1), the domain of agreement extends to the entire sentence. The consonant of the CM is the trigger and the other consonants are the targets of the consonant harmony. In (1), there is agreement in the feature [dorsal] in the singular and [coronal] in the plural.

We understand harmony as 'a phonological effect in which feature(s) agree over a string of multiple segments', see Rose & Walker (2011) for a slightly different definition. In this process, at least two segments interact. This interaction may occur locally, or at a distance across at least one (apparently) unaffected segment. Segments can participate in the harmony, they can be transparent or they can block the harmony process. Two possible analyses compete in the literature. First, the autosegmental *local iterative spreading rule* (Archangeli & Pulleyblank 1994), see 0: β agrees with α and γ agrees with β, but the two processes do not depend on each other. Second the OT *non-local trigger-target relations* (Walker 2014): a single trigger is related to many targets, both adjacent and non-adjacent. In Tagbana, different harmonies require different analyses.

First, the last vowel of the nominal or adjectival stem harmonizes with the CM's vowel, see (4). All vowels participate in the total harmony, including the nasal vowels (and the tones). In this case, both simple spreading, from one segment to the next, or a trigger-target analysis, where one trigger is used for several targets, are equally successful since the harmony relation is a simple one, from one vowel to another.

Second, a continuous string of segments of vowels and consonants is involved in nasal harmony (or vowel-consonant harmony). There is an allophonic relationship between [g], [ŋ] (and [ʔ]) in class 1 CM. [g] appears in different environments but not between two identical nasal vowels: in this case, [ŋ] is found, see (5). Total vowel harmony applies first, from V_1. In a second step the [nasal] feature that is now found at both sides of [g] spreads to the consonant, that also becomes also nasal. The local iterative spreading rule is more adequate since spreading of nasality is not obligatory.

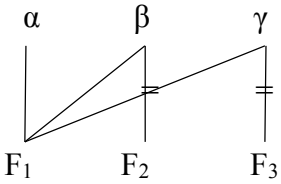
In addition to these standard processes, Tagbana has a third harmony, a consonant harmony which takes place within a domain larger than a word. Consonant harmony is an assimilation between consonants for a particular articulatory or acoustic property operating at a distance over at least another segment, Rose & Walker (2011). In Tagbana, the harmony takes place between the consonants of the morphemes related to the noun. In (1) for instance, the feature [dorsal] originates in the trigger consonant, the CM consonant. All morphemes listed above, the targets, agree with this feature.

Here a local iterative spreading analysis makes wrong predictions. The harmony takes place not only across vowels, but also across other consonants, which are featurally specified and the domain is larger than that predicted in local iterative spreading analysis. The consonant harmony is limited by the morphology and it targets only consonants of the nominal domain. In this case, only the non-local trigger-target relation. Besides a presentation of the data, we will discuss the harmony processes data in a formal framework.

(1) a. tī- ʔī kì gíʔí gī gā gè
tree-CM1.SG PRO which PRESENTATIVE this PTC
'Which tree is this one?'
b. tī:- rī tɻ̰ díʔí dī dā dè
tree-CM1.PL PRO which PRESENTATIVE this PTC
'Which trees are these one?'

(2) Local iterative spreading rule

(3)



(4) Total vowel harmony: V_1 C V → V_1 C V_1

a. k à-ʔ à 'village' b. t ī-ʔ ī 'tree'

(5) Nasal harmony (Vowel-consonant harmony) V_1 C V → V_1 C_1 V_1

[nasal] [oral] [oral] [nasal] [oral] [oral] [nasal]

a. kạ̀gàl 'jackal' b. kɔ́gṵ-ŋṵ 'knee' c. kōgō 'cat' d. fṵ̄-ŋṵ̄ 'anger'

(6) Consonant harmony: C_1V … C … C … → C_1V … C_1 … C_1 …

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